

NOVEMBER  
(NOVEMBER-DECEMBER)  
1943

# CHEMICAL PREVIEW

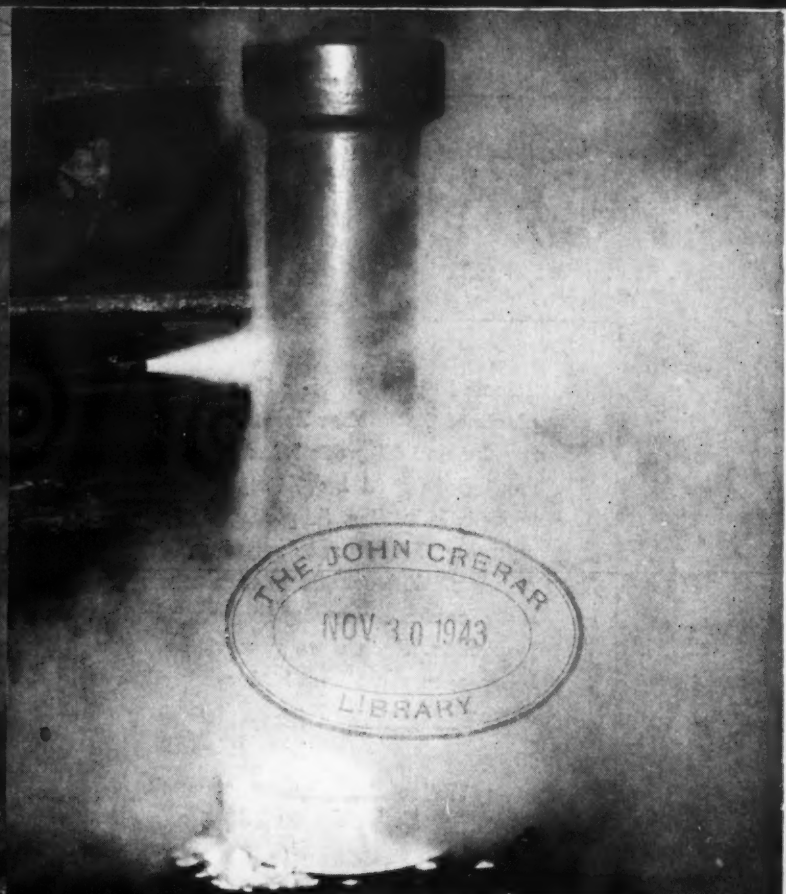
NEW

- ★ PROCESSES
- ★ MATERIALS
- ★ MACHINERY
- ★ PRODUCTS
- ★ APPLICATIONS

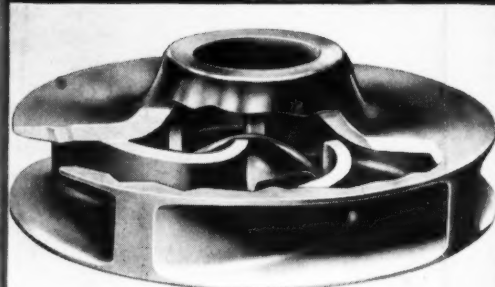
★  
Latest developments in chemical  
process manufacturing...for engi-  
neers, chemists and executives.

OVER 25,000 COPIES

CCA



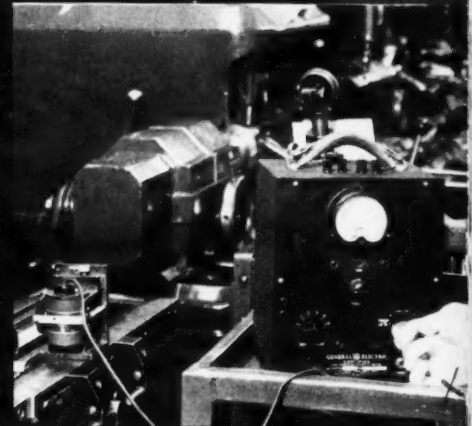
THE JOHN CRERAR  
NOV. 30 1943  
LIBRARY



↑ Low porosity chemical stone-ware stands extreme, sudden thermal shock test. Packed in dry ice; then blasted by steam

Multi-vane impeller for finely divided corrosive solids, acids. Quite narrow ports; face seals

← Electronic vibration velocity meter detecting vibration in machinery; instrument measures vibration of large or small bodies in any single direction →



Pressure reducing regulator refills cylinders from manifold systems



Multiple unit electrically heated combustion furnace modifiable to handle organic combustion changes within limit of 540° C.

# *"Specially Engineered"*

## FOR SYNTHETIC RUBBER PRODUCTION

Selected by the Rubber Committee for installation in all standard synthetic rubber plants of the Rubber Reserve Corporation, these proportioning pumps for blending regular and off-grade latex are typical of the several types of proportioning equipment developed by %Proportioneers, Inc.% for the synthetic rubber and other process industries. As pioneers in the development and perfection of proportioning equipment, long experience in allied industries is brought to bear on each specific problem. With complete manufacturing facilities "under one roof", %Proportioneers, Inc.% control every step in the production of their equipment — from casting to final inspection. Such close supervision, through every phase of machining and assembling, assures uniform high quality in every %Proportioneers% unit . . . and guarantees delivery on time.

**Write for descriptive  
Bulletin 1700**



*Photo courtesy U. S. Rubber Co.*

# % PROPORTIONEERS, INC. %

WRITE TO %PROPORTIONEERS, INC.%, 41 CODDING STREET, PROVIDENCE 1, RHODE ISLAND

*Cover*

From one extreme  
izes the severe test  
porosity chemical  
packing in dry ice  
steam. This new  
strength after being  
quenched. It is pro  
eliminates a large  
of high silica and  
to clay bodies.

Sudden changes in  
tion are avoided by  
(center left) by gra  
ance areas and abs  
or reentrant angle  
maker's centrifugal  
creased hydraulic  
of skin friction an  
relation with casing

The electronic vi  
pictured (right cen  
detect the cause of  
machine. The device  
unit and an amplifie

Refilling to 400 an  
smaller cylinders f  
systems and many  
the service rendere  
ducing regulator, (h  
er accuracy a gas  
used instead of a s  
is said that rupture

A wide variety of o  
be handled by the  
(lower right). In  
oxygen pressure re  
nace with four com  
intensity for half o  
dependently control  
any tube observed b  
pyrometer. Convent  
with calcium chlor  
moisture and Ascar  
bon dioxide.

*That's It*

**Tiny Slivers**

Millions of pounds of  
drilling are used as s  
in making aniline dyes,  
manufacture of explosive  
of rubber preservatives  
du Pont bulletin.

For more info  
uct at left,  
. . . . see info  
blank between





extreme to the other character-  
ere test imposed on new, low  
chemical stoneware (top) by  
dry ice and then blasting with  
is new body shows no loss of  
ter being heated to 400° F. and  
it is produced by a method which  
a large part of the glassy bond  
ica and alkali content common  
ies.

anges in velocity of flow direc-  
vided by the multivane impeller  
) by gradually diverging clear-  
and absence of sharp outside  
nt angles. Designed for the  
trifugal pumps, it provides in-  
draulic efficiency by reduction  
ction and its proper hydraulic  
h casing.

onic vibration-velocity meter  
ight center) is being used to  
ause of vibration in a grinding  
he device consists of a velocity  
mplifier unit.

400 and 800 psi respectively  
inders from cylinder manifold  
d many similar requirements is  
rendered by the pressure re-  
lator, (bottom left). For great-  
a gas loaded diaphragm is  
d of a spring loaded type. It  
rupture is impossible.

ety of organic combustions can  
by the combustion furnace  
ht). It comprises basically,  
essure regulating column, fur-  
our combination tubes, heating  
or half of each tube being in-  
controlled. Temperature of  
served by means of indicating  
Conventional absorption trains  
m chloride for absorption of  
d Ascarite for removal of car-  
e.

## at's Interesting

### Slivers Make Big Noise

ounds of tiny slivers from cast iron  
used as so called reducing agents  
iline dyes, which in turn enter into  
of explosives and also into production  
servatives according to an interesting  
ctin.

more information on prod-  
at left, specify CP 7927  
see information request  
between pages 2-3.

## Check Below, For More Product Information

EVERY PRODUCT DESCRIBED IN THIS ISSUE IS LISTED BELOW . . . Check the items that interest you, as many as interest you. Mail to publisher . . . information comes to you direct without obligation.

V	Key	Product	V	Key	Product	V	Key	Product	V	Key	Product
<input type="checkbox"/>	7927	Proportioning Equipment	<input type="checkbox"/>	7989	Electrolytic Analyzers	<input type="checkbox"/>	8051	Fork Trucks	<input type="checkbox"/>	8112	Electronic & Radio
<input type="checkbox"/>	7928	Tank Lining	<input type="checkbox"/>	7990	Timers	<input type="checkbox"/>	8052	Speed Reducers	<input type="checkbox"/>	8113	Centrifugal Blowers
<input type="checkbox"/>	7929	Processing Equipment	<input type="checkbox"/>	7991	Automatic Valve Specialties	<input type="checkbox"/>	8053	Laboratory Equipment	<input type="checkbox"/>	8114	Conversion to Coal Service
<input type="checkbox"/>	7930	Colloid Mills	<input type="checkbox"/>	7992	Water Still	<input type="checkbox"/>	8054	Steam Traps	<input type="checkbox"/>	8115	Spray Painting Rules
<input type="checkbox"/>	7931	pH Equipment	<input type="checkbox"/>	7993	CO <sub>2</sub> Analyzer	<input type="checkbox"/>	8055	Collector Loss Chart	<input type="checkbox"/>	8116	Roof Maintenance Materials
<input type="checkbox"/>	7932	Overhead Conveyors	<input type="checkbox"/>	7994	Level Gauges	<input type="checkbox"/>	8056	Underground Piping	<input type="checkbox"/>	8117	Faucet & Valve Repair Kit
<input type="checkbox"/>	7933	Mixing Equipment	<input type="checkbox"/>	7995	Rheostat Potentiometer	<input type="checkbox"/>	8057	Chemical Feeders	<input type="checkbox"/>	8118	Automotive Unit Cleaner
<input type="checkbox"/>	7934	Dewatering Press	<input type="checkbox"/>	7996	Corrosion Proof Lining and Equipment	<input type="checkbox"/>	8058	Valves	<input type="checkbox"/>	8119	Vibrating Screens
<input type="checkbox"/>	7935	Flintube Heat Exchangers	<input type="checkbox"/>	7997	Floor Patching Material	<input type="checkbox"/>	8059	Pumps	<input type="checkbox"/>	8120	Infusion Filters
<input type="checkbox"/>	7936	Floor Scales	<input type="checkbox"/>	7998	Plastic Insulation	<input type="checkbox"/>	8060	Threading Machines Manual	<input type="checkbox"/>	8121	Spray Nozzles
<input type="checkbox"/>	7937	Filters	<input type="checkbox"/>	7999	Synthetic Rubber	<input type="checkbox"/>	8061	Thermometers	<input type="checkbox"/>	8122	Snap Action Midget Switch
<input type="checkbox"/>	7938	Conveyors	<input type="checkbox"/>	8000	Resins	<input type="checkbox"/>	8062	Industrial Trucks	<input type="checkbox"/>	8123	Car Spotters
<input type="checkbox"/>	7939	Chemical Stoneware	<input type="checkbox"/>	8001	Adhesive for Non-Metallic Duct	<input type="checkbox"/>	8063	Steel Grating	<input type="checkbox"/>	8124	Rehanding Buckets
<input type="checkbox"/>	7940	Synthetic Tank Lining	<input type="checkbox"/>	8002	Wet Strength Paper	<input type="checkbox"/>	8064	Viscometer	<input type="checkbox"/>	8125	Vacuum Pumps
<input type="checkbox"/>	7941	Electronic Chemical Pump	<input type="checkbox"/>	8003	High Boiling Hydrocarbon Oil	<input type="checkbox"/>	8065	Temperature & Humidity Control Cabinets	<input type="checkbox"/>	8126	Lift Trucks
<input type="checkbox"/>	7942	Pumps	<input type="checkbox"/>	8004	Floor Maintenance Product	<input type="checkbox"/>	8066	Processing Equipment	<input type="checkbox"/>	8127	Tube Cleaners
<input type="checkbox"/>	7943	AC Welder	<input type="checkbox"/>	8005	Concrete Floor Patch	<input type="checkbox"/>	8067	Infra-Red Lamps	<input type="checkbox"/>	8128	Diamond Abrasive Wheel
<input type="checkbox"/>	7944	Metal Roll Reconditioning	<input type="checkbox"/>	8006	Lubricants	<input type="checkbox"/>	8068	Handling Equipment	<input type="checkbox"/>	8129	Heavy Duty Turret Lathes
<input type="checkbox"/>	7945	Electrical Air Cleaner	<input type="checkbox"/>	8007	Lining Maintenance	<input type="checkbox"/>	8069	Steam Traps	<input type="checkbox"/>	8130	Combination Trucks
<input type="checkbox"/>	7946	Industrial Ovens	<input type="checkbox"/>	8008	Protective Cream	<input type="checkbox"/>	8070	Vacuum Pumps	<input type="checkbox"/>	8131	Centralized Lubrication
<input type="checkbox"/>	7947	Steam Generators	<input type="checkbox"/>	8009	Adhesives	<input type="checkbox"/>	8071	Preventing Welding Fires	<input type="checkbox"/>	8132	Pump Governor
<input type="checkbox"/>	7948	Crane Electrifying Unit	<input type="checkbox"/>	8010	Hamming Mixture	<input type="checkbox"/>	8072	Cartons for Air Shipment	<input type="checkbox"/>	8133	Electronic Heaters
<input type="checkbox"/>	7949	Valves	<input type="checkbox"/>	8011	Protective Coating	<input type="checkbox"/>	8073	Moisture Indicator	<input type="checkbox"/>	8134	Accident Data
<input type="checkbox"/>	7950	Woven Wire Cloth	<input type="checkbox"/>	8012	Basic Chemicals	<input type="checkbox"/>	8074	Filters	<input type="checkbox"/>	8135	Lighting Equipment
<input type="checkbox"/>	7951	Insulation	<input type="checkbox"/>	8013	Pipe Joint Compound	<input type="checkbox"/>	8075	Water De-ionizing Equipment	<input type="checkbox"/>	8136	Centrifugals
<input type="checkbox"/>	7952	Steam Traps	<input type="checkbox"/>	8014	Label Paste	<input type="checkbox"/>	8076	Stainless Steel	<input type="checkbox"/>	8137	Lathes
<input type="checkbox"/>	7953	Pumps	<input type="checkbox"/>	8015	Carbon & Graphite	<input type="checkbox"/>	8077	Centrifugal Pumps	<input type="checkbox"/>	8138	Tubing Identification Chart
<input type="checkbox"/>	7954	Lubricated Plug Valves	<input type="checkbox"/>	8016	Agitators	<input type="checkbox"/>	8078	Bag Sealers	<input type="checkbox"/>	8139	Industrial Truck
<input type="checkbox"/>	7955	Vibration Velocity Meter	<input type="checkbox"/>	8017	Floor Patch	<input type="checkbox"/>	8079	Pressure Reducing Valve	<input type="checkbox"/>	8140	Integral Rotary Compressor
<input type="checkbox"/>	7956	Electronic Level Control	<input type="checkbox"/>	8018	Building Wire	<input type="checkbox"/>	8080	Temperature Testing Unit	<input type="checkbox"/>	8141	Air & Gas Blowers
<input type="checkbox"/>	7957	Recalibrator	<input type="checkbox"/>	8019	Wire Coatings	<input type="checkbox"/>	8081	Shunt Steam Meter	<input type="checkbox"/>	8142	Vacuum Pumps & Compressors
<input type="checkbox"/>	7958	Controls for Liquid Level	<input type="checkbox"/>	8020	Water Filters	<input type="checkbox"/>	8082	Fine Separation Equipment	<input type="checkbox"/>	8143	Multi-vane Pump Impeller
<input type="checkbox"/>	7959	Resiliency Tester	<input type="checkbox"/>	8021	Resins, Solvents, Thinners	<input type="checkbox"/>	8083	Magnetic Pulleys	<input type="checkbox"/>	8144	Packing List Protector
<input type="checkbox"/>	7960	Electronic Control	<input type="checkbox"/>	8022	Special Refractories	<input type="checkbox"/>	8084	Floatless High Level Signal	<input type="checkbox"/>	8145	Steam-jet Ejectors
<input type="checkbox"/>	7961	Pressure Regulator	<input type="checkbox"/>	8023	Pharmaceutical Preservative	<input type="checkbox"/>	8085	Plastic Instrument Chart	<input type="checkbox"/>	8146	Low Temperature Units
<input type="checkbox"/>	7962	Mixers	<input type="checkbox"/>	8024	Plastic Pipe	<input type="checkbox"/>	8086	Tank Gauges	<input type="checkbox"/>	8147	Polyphase Motors
<input type="checkbox"/>	7963	Controller	<input type="checkbox"/>	8025	Plastic Cork Coating	<input type="checkbox"/>	8087	Flow Indicator	<input type="checkbox"/>	8148	Conveyor Chains & Sprocket
<input type="checkbox"/>	7964	Processing Equipment	<input type="checkbox"/>	8026	Packings	<input type="checkbox"/>	8088	Manometers	<input type="checkbox"/>	8149	Counter-current Classifier
<input type="checkbox"/>	7965	Bubbler for Purging Lines	<input type="checkbox"/>	8027	Protective Coating	<input type="checkbox"/>	8089	Blower Installation Data	<input type="checkbox"/>	8150	Pipe Sections
<input type="checkbox"/>	7966	Laboratory Furniture	<input type="checkbox"/>	8028	Anhydrous Hydrofluoric Acid	<input type="checkbox"/>	8090	Tube Cleaners	<input type="checkbox"/>	8151	Rotary Pressure Joint
<input type="checkbox"/>	7967	Level Controls	<input type="checkbox"/>	8029	Diatomaceous Filter Aids	<input type="checkbox"/>	8091	Junior Size Shape Cutter	<input type="checkbox"/>	8152	Pipe Strainers
<input type="checkbox"/>	7968	Level Control	<input type="checkbox"/>	8030	Portable Dust Collectors	<input type="checkbox"/>	8092	Lighting Equipment	<input type="checkbox"/>	8153	Electronic Pump Volume Control
<input type="checkbox"/>	7969	Special Instruments	<input type="checkbox"/>	8031	Heat Exchanger	<input type="checkbox"/>	8093	Drying & Cooling Systems	<input type="checkbox"/>	8154	Portable Electroplater
<input type="checkbox"/>	7970	Temperature Controls	<input type="checkbox"/>	8032	Chain Hoists	<input type="checkbox"/>	8094	Liquid Temperature Control	<input type="checkbox"/>	8155	V-Belts
<input type="checkbox"/>	7971	Laboratory Furnaces	<input type="checkbox"/>	8033	Elevator Buckets	<input type="checkbox"/>	8095	Liquid Level Control	<input type="checkbox"/>	8156	Vibrating Conveyors
<input type="checkbox"/>	7972	Test Bomb	<input type="checkbox"/>	8034	Photocopy Machine	<input type="checkbox"/>	8096	Vacuum Cans for Storing Hot Materials	<input type="checkbox"/>	8157	Sealing Materials
<input type="checkbox"/>	7973	Dehydration Controls	<input type="checkbox"/>	8035	Lift Trucks	<input type="checkbox"/>	8097	Chilling Units	<input type="checkbox"/>	8158	Ball Bearing Swing Joint
<input type="checkbox"/>	7974	Magnetic Tester	<input type="checkbox"/>	8036	Gears & Gear Reducers	<input type="checkbox"/>	8098	Midget Pumps	<input type="checkbox"/>	8159	Chemical Porcelain
<input type="checkbox"/>	7975	Electronic Controls	<input type="checkbox"/>	8037	Heavy Duty Sacking Scale	<input type="checkbox"/>	8099	Rheostats	<input type="checkbox"/>	8160	Speed Reducers
<input type="checkbox"/>	7976	Test Instruments	<input type="checkbox"/>	8038	Laboratory Furniture	<input type="checkbox"/>	8100	Timers	<input type="checkbox"/>	8161	Masonry Saws
<input type="checkbox"/>	7977	Laboratory Furniture	<input type="checkbox"/>	8039	Roller Chain Couplings	<input type="checkbox"/>	8101	Temperature Indicator	<input type="checkbox"/>	8162	Laboratory Ovens
<input type="checkbox"/>	7978	Abraser	<input type="checkbox"/>	8040	Alloys	<input type="checkbox"/>	8102	Portable Pyrometer	<input type="checkbox"/>	8163	Filters
<input type="checkbox"/>	7979	Glass Ball & Socket Joint	<input type="checkbox"/>	8041	Electric Immersion Heater	<input type="checkbox"/>	8103	Panelboard & Metal Hoods	<input type="checkbox"/>	8164	Portable Bagging Machine
<input type="checkbox"/>	7980	CO <sub>2</sub> Analyzer	<input type="checkbox"/>	8042	Lighting Equipment	<input type="checkbox"/>	8104	Metal Cleaning Machines	<input type="checkbox"/>	8165	Pumps
<input type="checkbox"/>	7981	Combustion Furnace	<input type="checkbox"/>	8043	Safety Cans	<input type="checkbox"/>	8105	Pressure Switch	<input type="checkbox"/>	8166	Overhead Handling Equipmt.
<input type="checkbox"/>	7982	Automatic Manual Control	<input type="checkbox"/>	8044	Adjustable Speed Drive	<input type="checkbox"/>	8106	Processing Equipment	<input type="checkbox"/>	8167	Plant Construction Equipmt.
<input type="checkbox"/>	7983	Solenoid Valves	<input type="checkbox"/>	8045	Steam Traps	<input type="checkbox"/>	8107	Fog Type Extinguisher	<input type="checkbox"/>	8168	Dryers
<input type="checkbox"/>	7984	Temperature Controls	<input type="checkbox"/>	8046	Filter Plates	<input type="checkbox"/>	8108	Fuse Puller	<input type="checkbox"/>	8169	Explosion-proof Motors
<input type="checkbox"/>	7985	pH Equipment	<input type="checkbox"/>	8047	Exhaust Duct Fans	<input type="checkbox"/>	8109	Pumps	<input type="checkbox"/>	8170	Impact Mill
<input type="checkbox"/>	7986	Motor Starters	<input type="checkbox"/>	8048	Chain Sprockets	<input type="checkbox"/>	8110	Capacitors	<input type="checkbox"/>	8171	Geared Chain Hoists
<input type="checkbox"/>	7987	Converting Fusible Panelboards to Circuit Breakers	<input type="checkbox"/>	8049	Couplings & Fittings	<input type="checkbox"/>	8111	Flow & Level Transmitter	<input type="checkbox"/>	8172	Pipe Packings & Seals
<input type="checkbox"/>	7988	Flame Failure Cut Off	<input type="checkbox"/>	8050	Pipe Tools				<input type="checkbox"/>	8173	Synthetic Lining

Mail to CHEMICAL PREVIEW, 737 N. Michigan Ave., Chicago 11, Illinois

If you wish

MORE PRODUCT INFORMATION  
Check products which interest you, mail to us.

# If You Wish More Information On Products--

November-December, 1943.

See Reverse Side of this Sheet --- Be Sure To Give Your Address

(Listing of products continued)

✓ Key	Product	✓ Key	Product	✓ Key	Product	✓ Key	Product
<input type="checkbox"/> 8174	Soap Dispensers	<input type="checkbox"/> 8223	Diaphragm Valves	<input type="checkbox"/> 8271	Filter Press Closer	<input type="checkbox"/> 8318	Valves
<input type="checkbox"/> 8175	Eye & Face Shields	<input type="checkbox"/> 8224	Mixer Type Kettles	<input type="checkbox"/> 8272	Trailers	<input type="checkbox"/> 8319	Gate Valves
<input type="checkbox"/> 8176	Butterfly Valves	<input type="checkbox"/> 8225	Exchanger Tubing	<input type="checkbox"/> 8273	Steel & Semi-Steel Valves	<input type="checkbox"/> 8320	Bonding Process
<input type="checkbox"/> 8177	Box Car Loader	<input type="checkbox"/> 8226	Hydraulic Fluid Motor	<input type="checkbox"/> 8274	Compressors	<input type="checkbox"/> 8321	Fat Recovery Basin
<input type="checkbox"/> 8178	Vibratory Feeders	<input type="checkbox"/> 8227	Electric Lamps	<input type="checkbox"/> 8275	Synthetic Rubber Sponge	<input type="checkbox"/> 8322	Vibrating Liquid Screens
<input type="checkbox"/> 8179	Humidity Control	<input type="checkbox"/> 8228	Autoclave	<input type="checkbox"/> 8276	Sewage Treatment Equip.	<input type="checkbox"/> 8323	Direct-Fired Heater
<input type="checkbox"/> 8180	Metal Cutting Saw	<input type="checkbox"/> 8229	Pocket Size Pipe Gauge	<input type="checkbox"/> 8277	Barrel Trucks	<input type="checkbox"/> 8324	Mixers
<input type="checkbox"/> 8181	Synthetic Rubber Gloves	<input type="checkbox"/> 8230	Metal Stampings	<input type="checkbox"/> 8278	Mixers	<input type="checkbox"/> 8325	Industrial Glass Piping
<input type="checkbox"/> 8182	Colloid Mills	<input type="checkbox"/> 8231	Powered Shovels	<input type="checkbox"/> 8279	Protective Creams, Lotion	<input type="checkbox"/> 8326	Plug Valves
<input type="checkbox"/> 8183	Stainless-clad Steel	<input type="checkbox"/> 8232	Rolls	<input type="checkbox"/> 8280	Extrusion Presses	<input type="checkbox"/> 8327	Mixers
<input type="checkbox"/> 8184	Valves	<input type="checkbox"/> 8233	Open Steel Flooring	<input type="checkbox"/> 8281	Vacuum Pumps	<input type="checkbox"/> 8328	Valves
<input type="checkbox"/> 8185	Filters	<input type="checkbox"/> 8234	Rotary Marker	<input type="checkbox"/> 8282	Horizontal Plate Filter	<input type="checkbox"/> 8329	Conduit Systems
<input type="checkbox"/> 8186	Barrel Truck	<input type="checkbox"/> 8235	Production Management	<input type="checkbox"/> 8283	Blast Mill	<input type="checkbox"/> 8330	Hand Crane Power Unit
<input type="checkbox"/> 8187	Solvent Still	<input type="checkbox"/> 8236	Self-Cleaning Water Strainers	<input type="checkbox"/> 8284	Steel Strappings	<input type="checkbox"/> 8331	Refrigeration Units
<input type="checkbox"/> 8188	Boxboard Tester	<input type="checkbox"/> 8237	Spray Drying Equipment	<input type="checkbox"/> 8285	Insulation Tubing	<input type="checkbox"/> 8332	Annealing Oven
<input type="checkbox"/> 8189	V-Belts	<input type="checkbox"/> 8238	Stainless-clad Steel	<input type="checkbox"/> 8286	Flexible Couplings	<input type="checkbox"/> 8333	Engineering and Construction Services
<input type="checkbox"/> 8190	Mills & Blenders	<input type="checkbox"/> 8239	Carboy Drainer	<input type="checkbox"/> 8287	Bag Closers	<input type="checkbox"/> 8334	Clarification Filters
<input type="checkbox"/> 8191	Lighting Equipment	<input type="checkbox"/> 8240	Hand Tacker	<input type="checkbox"/> 8288	Gyrating Screens	<input type="checkbox"/> 8335	Aridifiers
<input type="checkbox"/> 8192	Industrial Trucks	<input type="checkbox"/> 8241	Flexible Couplings	<input type="checkbox"/> 8289	Power & Hand Pumps	<input type="checkbox"/> 8336	Cutting Tool
<input type="checkbox"/> 8193	Packaging Equipment	<input type="checkbox"/> 8242	Processing Equipment	<input type="checkbox"/> 8290	Adhesives	<input type="checkbox"/> 8337	Fire Extinguisher Chemical
<input type="checkbox"/> 8194	Packaging Machine	<input type="checkbox"/> 8243	Plastic Lighting Units	<input type="checkbox"/> 8291	Paper & Cloth Winders	<input type="checkbox"/> 8338	Industrial Wheels
<input type="checkbox"/> 8195	Spectrum Light Lamps	<input type="checkbox"/> 8244	Transmissions for Motorizing Machines	<input type="checkbox"/> 8292	Pressure Joints	<input type="checkbox"/> 8339	Electric Truck
<input type="checkbox"/> 8196	Air Separator	<input type="checkbox"/> 8245	Automatic Stop Valve	<input type="checkbox"/> 8293	Pipe Tools	<input type="checkbox"/> 8340	Welding Positioner
<input type="checkbox"/> 8197	Parts Cleaning Machine	<input type="checkbox"/> 8246	Dust & Fume Elimination	<input type="checkbox"/> 8294	Horizontal Mixers	<input type="checkbox"/> 8341	Full-view Fittings
<input type="checkbox"/> 8198	Lighting Equipment	<input type="checkbox"/> 8247	Centralized Lubrication	<input type="checkbox"/> 8295	Diaphragm Pumps	<input type="checkbox"/> 8342	Chemical Porcelain
<input type="checkbox"/> 8199	Chemical Industries Exposition	<input type="checkbox"/> 8248	Synthetic Rubber Sponge	<input type="checkbox"/> 8296	X-Ray Apparatus	<input type="checkbox"/> 8343	Wind Up Machine
<input type="checkbox"/> 8200	Screw Lift	<input type="checkbox"/> 8249	Conveyors	<input type="checkbox"/> 8297	Steam Traps	<input type="checkbox"/> 8344	Car Seals
<input type="checkbox"/> 8201	Condensate Return	<input type="checkbox"/> 8250	Jacketed Pipe Fittings	<input type="checkbox"/> 8298	Corrosion-proof Fastening	<input type="checkbox"/> 8345	Scales
<input type="checkbox"/> 8202	CO <sub>2</sub> Fire Extinguisher	<input type="checkbox"/> 8251	Steam Type Humidification	<input type="checkbox"/> 8299	Processing Equipment	<input type="checkbox"/> 8346	High Frequency Heat Units
<input type="checkbox"/> 8203	Drum Tumbling Machine	<input type="checkbox"/> 8252	Respirators	<input type="checkbox"/> 8300	Thermometers	<input type="checkbox"/> 8347	Air Conditioning Equip.
<input type="checkbox"/> 8204	Fittings & Flexible Hose	<input type="checkbox"/> 8253	Neoprene Gloves	<input type="checkbox"/> 8301	Electric Instruments	<input type="checkbox"/> 8348	Conveyors
<input type="checkbox"/> 8205	Kettles	<input type="checkbox"/> 8254	Filters	<input type="checkbox"/> 8302	Breast Protectors	<input type="checkbox"/> 8349	Concrete Mixing Machines
<input type="checkbox"/> 8206	Processing Equipment	<input type="checkbox"/> 8255	Protective Grinder Shield	<input type="checkbox"/> 8303	Air Dryers	<input type="checkbox"/> 8350	Pumps
<input type="checkbox"/> 8207	Explosion-proof Mixers	<input type="checkbox"/> 8256	Electric Gauges	<input type="checkbox"/> 8304	Proportioning Pumps	<input type="checkbox"/> 8351	Conveyor Chains
<input type="checkbox"/> 8208	Constant Speed Motor	<input type="checkbox"/> 8257	Pipe Strainers	<input type="checkbox"/> 8305	Self-priming Hand Pump	<input type="checkbox"/> 8352	Filter Presses
<input type="checkbox"/> 8209	Cyclone Dust Separators	<input type="checkbox"/> 8258	Rotary Dryer	<input type="checkbox"/> 8306	Humidification Nozzles	<input type="checkbox"/> 8353	Laboratory Furnaces
<input type="checkbox"/> 8210	Test Dryers	<input type="checkbox"/> 8259	Turbine Pumps	<input type="checkbox"/> 8307	Safety Interlocks	<input type="checkbox"/> 8354	Portable Conveyors
<input type="checkbox"/> 8211	Carton Stitchers	<input type="checkbox"/> 8260	High Speed Sifters	<input type="checkbox"/> 8308	Apron Conveyors	<input type="checkbox"/> 8355	S. S. Valves — Fittings
<input type="checkbox"/> 8212	Pumps	<input type="checkbox"/> 8261	Ball & Pebble Mills	<input type="checkbox"/> 8309	Laboratory Equipment	<input type="checkbox"/> 8356	Positive Displacement Pump
<input type="checkbox"/> 8213	Mixers	<input type="checkbox"/> 8262	Dust Collectors	<input type="checkbox"/> 8310	Draft Controls	<input type="checkbox"/> 8357	Helmet & Face Shields
<input type="checkbox"/> 8214	Magnetic Separators	<input type="checkbox"/> 8263	Buoyancy Level Control	<input type="checkbox"/> 8311	Tiering & Hoisting Truck	<input type="checkbox"/> 8358	Vapor Recovery Systems
<input type="checkbox"/> 8215	Pumpcups	<input type="checkbox"/> 8264	Amplidyne	<input type="checkbox"/> 8312	Unit Grid Heaters	<input type="checkbox"/> 8359	Magnetic Separators
<input type="checkbox"/> 8216	Diaphragm Pump	<input type="checkbox"/> 8265	Hydraulic Lift Truck	<input type="checkbox"/> 8313	Pump	<input type="checkbox"/> 8360	Floor Patch
<input type="checkbox"/> 8217	Flaring Tool & Accessories	<input type="checkbox"/> 8266	Pipe Tools	<input type="checkbox"/> 8314	Lathes	<input type="checkbox"/> 8361	Spray Nozzles
<input type="checkbox"/> 8218	Duplicating Marking Screen	<input type="checkbox"/> 8267	Spray Gun Operating Chart	<input type="checkbox"/> 8315	Heat Resistant Mitt	<input type="checkbox"/> 8362	Dust & Fume Suppressor
<input type="checkbox"/> 8219	Dust Collectors	<input type="checkbox"/> 8268	Dust Collectors	<input type="checkbox"/> 8316	Electronic Time Delay Relay	<input type="checkbox"/> 4th	
<input type="checkbox"/> 8220	Tank Vent Valves	<input type="checkbox"/> 8269	Sealer	<input type="checkbox"/> 8317	Sprinklers	<input type="checkbox"/> Cover Processing Equipment	
<input type="checkbox"/> 8221	Pulverizers	<input type="checkbox"/> 8270	Lighting Equipment				
<input type="checkbox"/> 8222	Wax Heating Tanks						

Please send information requested to:

Name ..... Title .....

Firm ..... (Please give the firm name)

Street Address .....

City and State .....

Mail to **CHEMICAL PREVIEW, 737 N. Michigan Ave., Chicago 11, Illinois**



## "That's Interesting"

### 20 Million Lbs. of Citric Acid

Crystalline carbamide or synthetic urea is made in a high pressure plant from coal tar air and water. In addition to enriching the culture medium on which "pedigreed" yeasts are grown it is employed to enrich the food of the Aspergillus mold in the citric acid fermentation plants. More than 20,000,000 pounds of citric acid are normally produced in this country by the mold fermentation method.

### Health Bombs

A health bomb is now being used by our armed forces in tropical areas where malaria is prevalent. It discharges mist that kills insects but is harmless to humans. One bomb will fumigate 150,000 cubic feet.

### Chlorinated Solvents

Post-war demobilization of non-flammable chlorinated solvents from vital war services will turn a record volume of these products into normal peacetime channels, especially dry cleaning. The many advantages of such compounds — freedom from odor and the fact that they may be recovered after use makes them favored by the cleaning industry.

### New Use for Plastics

One of the newest and most unusual applications of plastics reports Ohmite News is in connection with piston rings. While it is not probable that the entire ring would be made of plastic bakelite inserts have worked out successfully.

### Synthetic Gems

Previous to the present war about 150,000,000 jewel bearings were imported each year. In the short period of two years an adequate supply of synthetic gems has been achieved and these equal in quality the foreign product.

### From Greenland's Icy Mountains

Cryolite, reports the Bureau of Foreign & Domestic Commerce, a fluorine mineral mined only in Greenland has in recent years found application as an insecticide and is an effective substitute for calcium arsenate in control of boll worms.

### Where There's Smoke

Approximately 350 cigarettes can be made from a pound of leaf. This year some 750 million pounds of leaf will be required to meet cigarette demand.

### 1 Oz. per Gal.

Less than 1 oz. of a new chemical per gallon reduces by 1/3 the copper used for electrotype printing plates and cuts the usual amount of scrap by 1/2.

### Caffeine

The use of caffeine free coffee bean grown on the Comoro Island in the Indian Ocean is recommended to packers of caffeine free coffee in the house magazine, Deco Trefoil.

### Saving Copper

Temporary water and gas lines are now being made of copper coated soft steel replacing copper tubing and effecting savings in this vital metal.

### Square Milk Bottles

Square milk bottles are now being produced in an eastern bottle manufacturing plant. Their space saving design and other features may soon make their adoption widespread.

### House Screens Made of Cotton

Cotton continues to be one of the most versatile of materials. Having proved a good and even superior alternate in many instances its latest job is its use in house screens. Impregnation makes the cotton fibers sufficiently durable to deliver the required service.

### A Healthy Business

The vitamin business should be a healthy one and it is. The tremendous demand for vitamin products of all sorts requires an output that now has a valuation of ninety million dollars yearly.

### By Inches

In ancient times the foot was reckoned at twelve thumbnails in length and in early England the inch was the length of three grains of barley corn taken from the middle of the ear and placed end to end states an interesting article on the history of standards in the Flowline.

(Continued on page 107)

# Answer your questions ABOUT GLASS-LINED STEEL

at Booth No. 502... Exposition  
of Chemical Industries



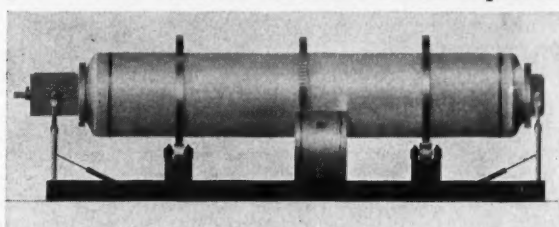
"At the Chemical Show, we will exhibit the latest developments in glass-lined steel and stainless steel process equipment, some of which are described below. If you can be in attendance, we suggest that you examine these units carefully to see how they can be most helpful to you. If you cannot be there, please write us. We shall be glad to send you our latest catalogs or other technical information required."

GEORGE F. KROHA  
Vice-President



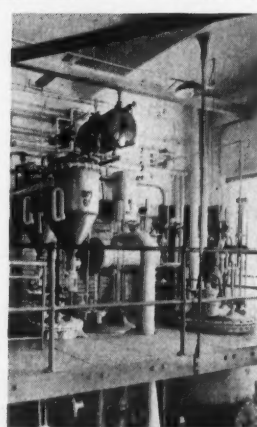
## New or improved Pfaudler process equipment includes:

**GLASS-LINED ROTARY DRYERS**—One of the newest developments in glass-lined steel equipment is Rotary Dryer Shells fully equipped with porcelain flights inside with traction rings and gearing on the outside. This scale model duplicates larger production equipment which is already in successful operation. Units of this type are intended for the drying or crystallization of solids and semi-solids. The anti-friction properties of the glass-lining facilitate movement of the product and corrosion resistance is also improved.



Varying degrees of dryness can be accomplished by the application of proper drying apparatus.

**STAINLESS STEEL REACTORS**—Representative of a new line of standard stainless steel reactors will be a 200-gallon jacketed closed unit equipped with motor-driven agitator. It is built with an all-welded stainless steel liner with carbon steel jacket. Equipped with ample flanged openings in top head to permit wide range of processing.



**HIGH PRESSURE GLASS-LINED REACTORS**—This new Pfaudler line is meeting difficult service conditions successfully in many phases of war production. A 500-gallon unit will be displayed, fully equipped with glass-covered impeller agitator and adjustable baffles suitable for incorporating gas into a liquid, mixing products of heavy viscosity, or incorporating solids into a liquid. Built for maximum internal pressure of 125 P.S.I. coincident with jacket pressure of 90 P.S.I. See it in operation!



**GLASS-LINED JACKETED PIPE HEAT EXCHANGER**—Developed for the polymerization of concentrated sulphuric acid, low-boiling hydrocarbons and tertiary butyl alcohol in the manufacture of butadiene. Units of varying capacity can be built to meet your requirements; maximum lengths, 10 feet.

**GLASS-LINED ISOMERIZATION TOWERS**—A section of an actual glass-lined tower built for internal pressure of 300 P.S.I. will be on exhibit to permit your inspection of a new type of forged flange as well as means of supporting bubble-cap plates. Intended for the isomerization of butane and pentane, general reaction work and gas absorption. Glass-lining is fully resistant to fluid acid accelerators.

**GLASS-LINED CHEMICAL VALVES**—This new line embraces glass-lined flush, in-the-line, and relief valves. Flush valves are equipped with porcelain seats and are tested up to 90 P.S.I.



**GLASS-LINED LABORATORY AUTOCLAVE**—Intended for experimental and pilot plant work in handling corrosives where pressures as high as 500 P.S.I. are involved. Equipped with motor-driven anchor type glass-covered agitator. Built for high temperature heating.

**GLASS-LINED EVAPORATING PANS**—These standard, jacketed glass-lined evaporating pans are intended for the crystallization of CP salts and provide maximum protection against impurities. A 12-gallon unit will be displayed; also made in 60- and 150-gallon capacity.

A staff of Pfaudler Sales Engineers will be in attendance throughout the show who will be glad to go over your immediate problems and show you what can be accomplished with Pfaudler-built process equipment today.

**THE PFAUDLER COMPANY, ROCHESTER 4, NEW YORK**  
ENGINEERED GLASS-LINED AND STAINLESS STEEL EQUIPMENT

When inquiring specify CP7929 . . . see information request blank, pgs. 2-3



Booth 734  
**PREMIER  
COLLOID  
MILLS**

See how this and other models of Premier Mills homogenize, disperse, emulsify a wide variety of chemical materials.



**PREMIER MILL CORPORATION**  
218 GENESEE STREET • GENEVA, NEW YORK  
New York Sales Office: 110 East 42nd Street, New York 17, N. Y.

When inquiring specify CP7930 — see information request blank, pgs. 2-3

# CHEMICAL PREVIEW

Edited for Production and Laboratory  
Men in the Chemical Process Industries

VOLUME 6

NUMBER 6

NOVEMBER-DECEMBER, 1943

## What's In This Issue

Cover Pictures .....	2
That's Interesting .....	2, 3, 107
New Solutions of Plant Problems .....	8
Control Instruments and Equipment .....	14
Materials — Production and Maintenance ..	26
Practical Ideas .....	34
New Literature — Catalogs and Books ..	40
Production Equipment .....	56
Product Directory .....	102-103
How to Get More Product Information ..	2-3
Advertisers In This Issue .....	104-106

## How To Use This Issue

If you are particularly interested in a specific type of product, turn first to the Directory of All Products in This Issue on pages 102 and 103. Here is an alphabetical listing of every product, whether it is featured editorially or in the advertising.

Then, to make sure you keep abreast of latest developments, perhaps something you have heard nothing about, you'll want to browse through the rest of the pages.

The Editors have searched far and wide to bring you this comprehensive Preview of product developments of help to you in Chemical Process manufacturing work. Thus, they save your time, enable you to keep posted with a minimum of effort. When you find an item that interests you particularly, and you'd like more information on it, use the handy information request slip between pages 2 and 3. Just check the item that interests you, fill in your name and address and send this slip to the publishers. The information will come to you promptly. And don't forget . . . when you have finished this issue, pass it on to your associates as they'll be interested, too.

## How To Get This Magazine Regularly

Subscriptions to this magazine are NOT SOLD. Its circulation is restricted to men who are actively engaged, in responsible capacities, in Chemical Process manufacturing plants.

You can receive it free of charge by sending your request to the publishers on your company letterhead and telling them of your connection in your Chemical Process plant, if you are a chemist, engineer or executive. Your request subscription will start with an early issue. There is no charge or obligation for this service.



Zeolite Chemical Co. uses this L&N Glass-Electrode pH Indicator to check performance of their water-softener in their lab.

## Using Conditioned Water for War Work

Checking the pH of water is a job in which L&N equipment can help all the way from stream, lake or well to process tank or boiler.

Shown above is the lab instrument, pH Indicator No. 7662, which reads directly in pH, and retains full accuracy at temperature of 85F(30C) in lab or plant atmosphere as humid as 95 per cent relative. Indicator has temperature compensator which eliminates computation. It can be used day in and day out with no more attention than adding KCl crystals to salt bridge every 6 or 8 weeks; occasionally cleaning electrodes and replacing dry batteries. Instrument is furnished with all supplies and accessories. For details, see Catalog E-96(2), sent on request.



LEEDS & NORTHRUP COMPANY, 4195 STENTON AVE., PHILA., PA.

**LEEDS & NORTHRUP**

MEASURING INSTRUMENTS • TELEMETERS • AUTOMATIC CONTROLS • HEAT-TREATING FURNACES

Jrl Ad E-96-701(1a)

When inquiring specify CP7931 — see information request blank, pgs. 2-3

## Free VALUABLE FLOOR SPACE



## — With an A-F OVERHEAD CONVEYOR SYSTEM

THIS unusual A-F Overhead Conveyor installation conveys materials over 12,000 feet without obstructing floor or aisles. It can be extended indefinitely outside of buildings, over railroad tracks and driveways. Its endless-stream operation brings parts for assembly and it can be used as a storage bank. What is your "indoor transportation" problem? In the past 42 years A-F Engineers have installed practically every type of conveyor system. Can we help YOU?



THE ALVEY-FERGUSON CO., 18 Disney St., Cincinnati 9, Ohio

CONVEYING EQUIPMENT  
**Alvey-Ferguson**  
METAL PRODUCTS CLEANING & FINISHING EQUIPMENT

When inquiring specify CP7932 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



**Over 25,000 Circulation  
in These Chemical  
Process Plants  
CCA**

- Brewers, Distillers
  - Cellulose
  - Cement, Lime
  - Ceramics
  - Chemicals
  - Drugs, Cosmetics
  - Fertilizers
  - Food Products
  - Leather
  - Metallurgical
  - Paints, Varnishes
  - Paper, Pulp
  - Petroleum Refining
  - Plastics
  - Rubber
  - Soap
- ... and allied lines

★

PUTMAN PUBLISHING COMPANY  
737 N. Michigan Ave., Chicago, 11, Illinois  
WHItchall 5977

★

NEW YORK CITY 17 . . . KENNETH S. KAULL,  
District Manager, Eastern New York, New England, 60  
E. 42nd St. VAnderbilt 6-5160

PHILADELPHIA . . . L. R. COOK, District Manager,  
Eastern Pennsylvania, New Jersey, Maryland, Delaware,  
23 Edgley Ave., Glenside, Pa., Ogontz 2591

CHICAGO 11 . . . C. H. THOMAS, District Manager,  
Chicago-St. Louis-Minneapolis, 737 North Michigan  
Ave., WHItchall 5977

CLEVELAND 7 . . . WM. E. COATES, District Manager,  
Cleveland-Detroit-Toledo, 415 Detroit-Warren Road  
Building, Academy 6077

CLEVELAND 15 . . . HARRIS N. PICKETT, District  
Manager, Cleveland-Cincinnati-Pittsburgh-Buffalo-Roch-  
ester, 801 Caxton Building, Main 3341

LOS ANGELES 15 . . . J. H. TINKHAM, District Man-  
ager, Los Angeles-San Francisco, 1406 S. Grand Avenue,  
Richmond 6191

★

Technical Editor . . . . . PROF. H. McCORMACK  
Assistant Editor . . . . . JOSEPH L. WHITE  
Art Director . . . . . H. W. LICHTENBERGER  
Assistant Publisher . . . . . A. W. B. LAFFEY  
Vice President . . . . . EWING W. GRAHAM  
President and Publisher . . . . . RUSSELL L. PUTMAN

# FOR POST WAR ECONOMY —



*Begin now  
to standardize on*

## PORTER

*Better Built*

## EQUIPMENT

ARMY  
NAVY

**PORTER**  
*Better Built*  
Equipment  
Established 1900

### H. K. PORTER COMPANY, Inc.

GENERAL OFFICES: PITTSBURGH, PENNSYLVANIA

FACTORIES:

PITTSBURGH, PA.  
BLAIRSVILLE, PA.

NEWARK, N. J.  
NEW BRUNSWICK, N. J.

**PROCESS EQUIPMENT DIVISION:**  
Agitators, Mixers, Blenders, Autoclaves,  
Kettles, Pressure Vessels, Driers,  
Ball and Pebble Mills.

**LOCOMOTIVE DIVISION:**  
Diesel, Diesel-Electric, Electric, Steam,  
and Fireless Steam Locomotives.

**QUIMBY PUMP DIVISION:**  
Screw, Rotex, Centrifugal, Chemical,  
and Steam Pumps.

**ORDNANCE DIVISION:**  
Projectiles, Heavy Forgings, Breech Blocks.

—When inquiring specify CP7933 . . . see information request blank, pgs. 2-3—

# Zenith

## CONTINUOUS DEWATERING PRESS

PROCESSES UP TO 15 TONS PER HOUR

The Zenith is the ideal continuous press for efficiently dehydrating large quantities of any type of pulp. Pressure is transmitted by means of a huge slowly revolving spiral-bladed spindle. Drainage is doubly efficient because the water drains to the inside through the hollow, perforated brass covered spindle and to the outside through the perforated cylindrical shell. Both the spindle and the shell are perforated with very small holes to reduce pulp loss to a minimum.

Eight resistors within the press keep pulp rolling over and prevent it from revolving with spindle. Where required these resistors can serve a dual purpose to heat pulp giving a more efficient and easier pressing.

If your processing requires the dewatering of any relatively free draining crystalline, granular or fibrous slurries, write for complete facts to Jackson & Church Co., Saginaw, Michigan.



When inquiring specify CP7934 — see information request blank, pgs. 2-3

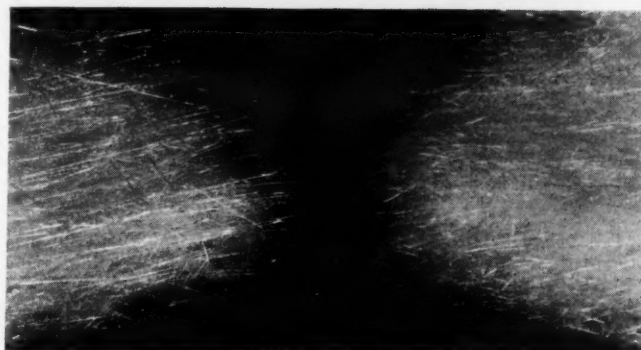
## GLASS FIBERS OFFER ALMOST UNLIMITED SOURCES

*Recent developments point to wide applications in both military and post-war production*

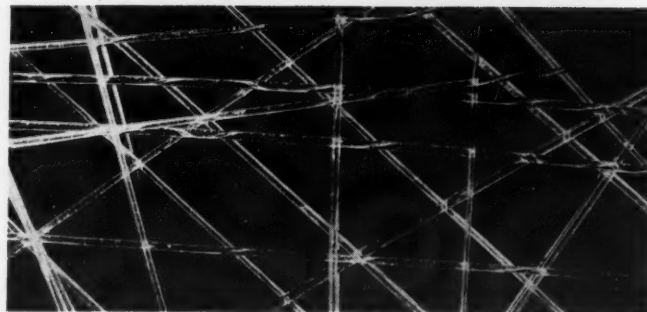
The glass fibers pictured and described here — courtesy of Owens-Corning Fiberglass Corp. — are now finding interesting applications in the production of new materials that despite their advanced and remarkable features are said to be but a suggestion of the scope and revolutionary nature of their unexplored possibilities.



↑ PAD OF NUMBER 115 K GLASS FIBERS. These fibers are characterized by their curly nature. Each fiber is crinkled throughout its length to provide very low density and high resiliency. The glass composition offers maximum resistance to acid conditions. Average diameter of the fibers is .00115. Surface area per pound is 262 sq. ft.



← THE NUMBER 800 GLASS FIBERS (LEFT) and the number 450 glass fibers (right) are coarse fibers suitable for filtering, evaporating and contact mat applications where low resistance is required. These glass fibers resemble smooth, solid glass rods of very small diameter. Individual fibers are non-hygroscopic and non-absorbent. Average fiber diameter of the Number 800 fibers is .0080 in.; of the Number 450 fibers, .0045 in.; surface area per lb. of Number 800 fibers is 38.7 sq. ft., of the Number 450 fibers 68.8 sq. ft.



PHOTOMICROGRAPH OF NUMBER 800 FIBERS which shows in greater detail their structure and resemblance to smooth, solid glass rods of small diameter. These fibers are suitable for filtering, evaporating and contact mat operations. Resistant to acids and weak alkalis. The interesting properties of these fibers indicate countless applications yet to be thoroughly investigated.

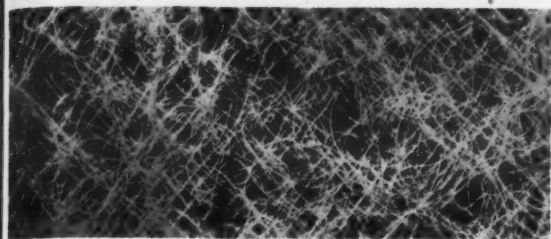
Seven basic glass fibers are now made available to manufacturers as raw materials for use with other fibers, plastics and cements; and for use with various types of industrial and chemical processing equipment. Such possible applications of glass fibers have by no means been completely explored but it is believed that the availability of the fibers will lead manufacturers to experiment with them.

### Fiber-glass Plastic Combinations

These fibers used in combination with plastics serve as reinforcements structural parts for aircraft.

These parts can be molded at low pressures, reducing fabrication costs and manhours. The adaptability of the fibers to similar use as re-inforcement for certain cements and plaster-like materials where their high tensile strength may give improved physical properties has been indicated by experience.





PHOTOMICROGRAPH OF NUMBER 115K FIBERS. Here the "curly" nature previously mentioned is thoroughly apparent. Note how each fiber is crinkled or waved throughout its length. The maximum resistance to acid conditions inherent in these fibers make them particularly valuable where such conditions must be met effectively. Low density, high resiliency provided.

Another potential field of use is the admixture of the glass fibers with other fibers, as in felts and papers. It is believed that the high tensile strength and non-stretching and non-shrinking characteristics of the fibers will contribute new and valuable properties to other fiber and textile materials if means can be found to combine economically the raw fibers. Fabrics combining glass with cotton, rayon and asbestos are now manufactured by combining the yarns of the desired types.

#### Speed Alcohol Production

Use of glass fibers as tower packing in rectifying columns employed in the production of ethyl alcohol has resulted in a marked speed up in delivery of this vital material. Potential processing uses include many evaporation, diffusion and fractionation applications in which the surfaces of the fibers may be wetted to increase greatly the film surface of a liquid that is to be evaporated or otherwise chemically or physically modified.

Filtering of air or gases, liquids or sludges by the straining method is cited as another field of use. The substantially cylindrical, smooth surfaced fibers provide comparatively low resistance to the flow of liquids, yet the interstices between fibers may be modified to provide almost any degree of porosity by the choice of the proper fiber size and by the density at which the fibers are packed.

Still other potential processing uses mentioned in the recent announcement concerning the availability and indicated applications are those in which water is sprayed on the fibers to humidify or de-humidify air that is forced through them and in eliminator applications where the fibers are employed to gather free particles of water or other liquids entrained in the air stream.

#### Seven Basic Fibers

The seven basic glass fibers now available are distinguished by differences in diameter, tensile strength and the glass compositions employed. Four glass compositions are used to provide different properties required for different applications. These various properties include resistance to acids and weak alkalis, resistance to high temperatures and to severe weathering exposure. Limited amounts of these basic fibers will be made available for experimental purposes and information regarding their properties, uses and applications will be given. Exploratory research facilities, it is stated, cannot be offered unless the indicated use would be of military importance. Illustrations demonstrate versatility of the fibers. (Further information on request from Owens-Corning Fiberglas Corp., Toledo, Ohio.)

NOVEMBER - DECEMBER, 1943

# BROWN FINTUBE'S



## SECTIONAL HEAT EXCHANGERS give users many advantages never before available

● Featured in these new exchangers is a "non-removable" rear end assembly. You simply remove the bolts, back the cover plate off far enough to clear the adjacent "sections," then swing the plate through a 180° arc, to gain clear, unobstructed entrance into the exchanger. There are no heavy members to take off, lower to the ground, then raise back up and put back on again. Consequently inspection, or the substitution of one "hairpin" for another so as to use the same "stand" for different duties, is easy, quick and inexpensive.

The new "head" seal employing a solid ring and two split collars tightened with cap screws, is assembled easily with only an 8" crescent wrench. This construction avoids outboard stress on the split ring

lock,—and tests with a solid copper gasket have proved it capable of holding more than 2000 pounds pressure for days, without trace of any "weeping."

In addition, these exchangers have welded one-piece "hairpins" that positively prevent any mixing of the tube-side and shell-side commodities,—and, through the use of Brown Fintubes, provide the high thermal efficiency and trouble-free operation only Brown resistance-welded integrally-bonded fintubes can give you.

A fully descriptive engineering bulletin, complete with dimensions and other data of interest to every engineer and operating men sent gladly on request. No obligation. Send for Brown "Sectional Hairpin" bulletin today.



Brown integrally-bonded Fintubes are used in all Brown Fintube Heat Exchangers,—are available in exchangers,—made by most other manufacturers,—and are ideally suited for many other heating and cooling services. Furnished in plain "longitudinal" or "cur and twisted" types,—wide range of sizes, in low carbon or special steels. Design assistance furnished gladly.

## THE BROWN FINTUBE co.

119 FILBERT STREET • ELYRIA, OHIO

MANUFACTURERS OF INTEGRALLY BONDED FINTUBES AND FINTUBE HEAT EXCHANGERS

When inquiring specify CP7935 . . . see information request blank, pgs. 2-3



*Unbeatable Accuracy!*

★ Precision-built Toledo Floor Scales assure unbeatable accuracy and dependability in heavy-duty weighing. Platform sizes to accommodate a wide range of load requirements. Interchangeable, self-gauging pivots. Parallel link platform suspension. Famous Toledo Double Pendulum Indicating Mechanism speeds war-time weighing. Also, with Print-weigh, for printed weights. Write for bulletin.

Toledo Scale Company, Toledo, Ohio.

**TOLEDO FLOOR SCALES**

When inquiring specify CP7936 — see information request blank, pgs. 2-3

**PORO-STONE FILTRATION**  
*for ACIDS*  
**AND CORROSIVE LIQUIDS**

• Adams Poro-Stone Filters are supplied in two types—the rubber-lined "CFR" and lead-lined "CFL"

— each designed for the specific conditions to be encountered. Totally enclosed and compact, these filter units are easily installed, and readily cleaned by back washing. Heavy-duty construction, plus all internal parts protected against corrosion, Adams Poro-Stone Filters assure long serviceability, minimum maintenance time and expense, on a wide variety of industrial applications. Write for Bulletin 302, containing full details.

**R. P. ADAMS Co.**

69 CHICAGO ST.  
BUFFALO, N. Y.

**ADAMS Poro-Stone ACID FILTERS**

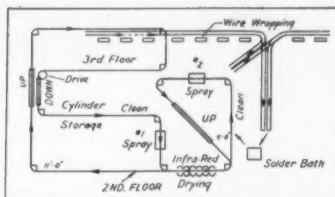
When inquiring specify CP7937 . . . see information request blank, pgs. 2-3

## New Solutions of Plant Problems

The solutions here given are selected because of their ideas in the application of available equipment or materials to overcoming certain tough plant problems. Many of these suggest basic ideas applicable in kindred or very different problems of process production.

### Conveyors Meet Space Problems, Boost Output of Plant Six Times

*Speed spraying, drying, soldering and other operations in production of oxygen cylinders*



PLAN OF 2ND FLOOR . . . showing how cylinders are handled

**Solution** — Engineers recommended overhead conveyors, a realignment of operations and installation of infra-red drying equipment overhead, there being no room elsewhere. Drawing indicates manner in which conveyors

**Problem** — Plant was striving to greatly increase production of oxygen cylinders for military requirements. Floor limitations imposed small production. The finished cylinders had to be painted and the paint allowed to dry.

bring cylinders from storage through cleaning, spraying, drying, wrapping, soldering, spraying and final drying operations. Conveyors also facilitate testing and packing in equally restricted floor space on third floor. The conveyor and infra-red equipment provide for moving the cylinders through a double bank of infra-red lights installed overhead.

**Results** — Production increased six times, greatly improved working conditions because of uncluttered floor and 10% cut in labor required, freeing manpower for other duties. Literature describing this installation as well as other applications in various industrial fields sent on request.

LAMSON CORP., Dept. CP, Syracuse, N. Y.

When inquiring specify CP7938 — see information request blank, pgs. 2-3

### New Chemical Stoneware Resists Thermal Shocks

*Heated to 400 F by direct steam, hot gases and cooled quickly; made of non-critical material*

**Problem** — Fragility and lack of capacity to withstand any degree of thermal stress has been a difficult factor in use of chemical stoneware in use where such extreme shocks were imposed in the processes involved. Heating has had to be done slowly and carefully by hot oil, sand blasts and jacketing. Inevitable progressive weakening of body structures caused sudden failures without warning.

**Solution** — A new stoneware (Ceratherm 500) is a low porosity chemical stoneware that can be heated by direct steam and hot gases and can be cooled quickly. This new body is made by a recently perfected method, eliminating a large part of the glassy bond of high silica and alkali content common to clay bodies. This new stoneware is now made into tanks, crocks, kettles, cooling, condensing coils, pumps, sinks and pipes. Materials are non-critical.

**Results** — A chemical stoneware of greatly increased strength, low porosity and high thermal conductivity — a body approximately 27 percent stronger and with a thermal conductivity about four times that of regular type bodies.

UNITED STATES STONEWARE CO., Dept. CP, Akron, Ohio.

When inquiring specify CP7939 — see information request blank, pgs. 2-3



NEW STONEWARE heated by hot gases or steam directly applied



## New Solutions

### Concrete Tanks Made Leak-proof By Synthetic Lining

*Applied to surfaces like wallpaper it meets storage needs of oils, fuels*



CONCRETE TANK . . showing column, walls, floor with lining applied

**Problem** — To offset the shortage of steel plate, mammoth underground concrete fuel tanks have been used in various installations by the Navy. Light fuels tended to seep through the pores of the concrete. High octane gasoline suffered a drop in octane rating and formed a gum when exposed to the alkaline present in the concrete.

**Solution** — Synthetic rubber lining (Thiokol FA) was applied to the concrete walls, floors and columns of the tanks much in the manner that wallpaper is hung. Surface irregularities are first removed and the walls coated with a rubber cement (developed by Boston Woven Hose Co.). When this has thoroughly dried and a second coating of the adhesive has reached the right stage of tackiness, strips of the lining are applied so that the concrete surfaces are completely covered.

**Results** — Octane rating of gasoline retained. Leakproof service and protection provided, even when concrete walls became cracked due to stresses, ground shifts and temperature changes. This material has been used in producing a variety solvent resistant hose and other products.

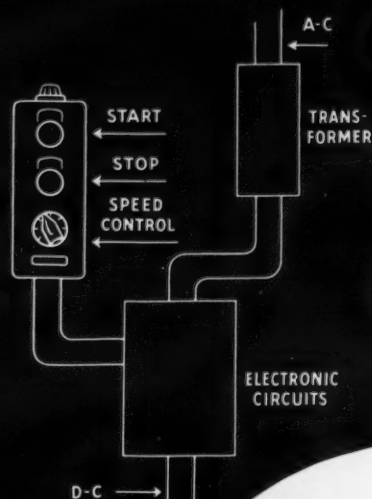
THIOKOL CORP., Dept. CP, Trenton, N. J.

When inquiring specify CP7940  
— see information request blank, pgs. 2-3

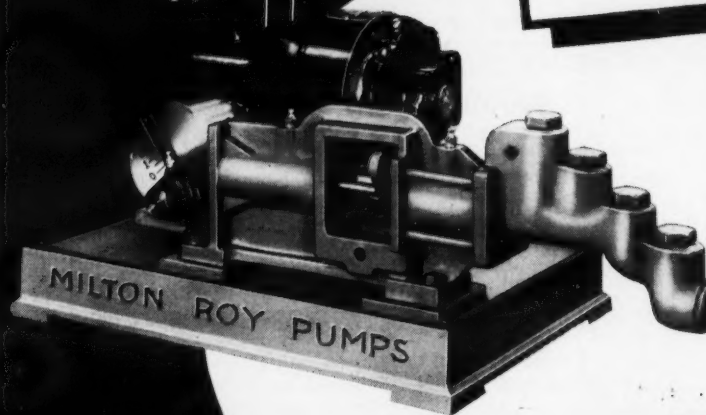
For more information on product at right, specify CP 7941  
... see information request blank between pages 2-3.

# Now!

## ELECTRONIC VOLUME CONTROL for Milton Roy Chemical Pumps



- Employs electron tubes to convert a-c to controlled d-c.
- Affords simple, wide-range speed control for the operation of d-c motors from a-c power lines.
- Performs additional functions of starting, accelerating, motor protection and dynamic braking.
- Allows you to select motor speed during operation or to pre-set speed before starting.
- Provides single-dial speed control, plus start and stop buttons . . . positive, stepless, motor acceleration . . . precise volume control in pumping chemicals . . . from a single station most conveniently located.



This new Electronic Volume Control system is now available with Milton Roy Pumps. The equipment is simple, compact, complete. It may be manually operated or is adapted for automatic operation by means of other electrical circuits in conjunction with flow meters or other control instruments.

A Milton Roy Step-Valve Pump with Electronic Volume Control will be one of the features of our showing at the Chemical Exposition, Madison Square Garden, New York City, December 6-11 at Booth 627-29. Be sure to see it if you attend . . . write for new bulletin if you cannot.

Consult with Milton Roy engineers on any problem having to do with pumping chemicals in precisely controlled volume at discharge pressures up to 20 thousand pounds per sq. in. It will help us make recommendations and quote prices if you will state

- Capacity, gallons per hour.
- Discharge pressure, lbs. per sq. in.
- Material to be pumped.

charge pressures up to 20 thousand pounds per sq. in. It will help us make recommendations and quote prices if you will state

- Percentage of concentration.
- Operating temperature.
- Motor characteristics.

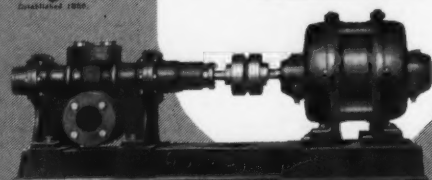
# MILTON Roy PUMPS



1310 E. Mermaid Ave., Chestnut Hill - Philadelphia, Pa.

## QUIMBY PUMPS

SCREW PUMPS  
CENTRIFUGAL PUMPS  
CHEMICAL PUMPS  
ROTEX PUMPS



**QUIMBY PUMP COMPANY**  
INCORPORATED

Division of H. K. PORTER COMPANY, Inc.

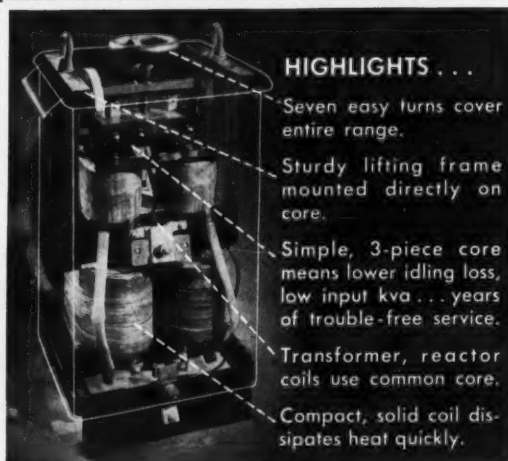
General Offices: Pittsburgh (1), Pennsylvania  
Factories: Pittsburgh and Blairsville, Pa.  
Newark and New Brunswick, N. J.

### Constant Efficiency

No metal-to-metal contact except at bearings and driving gears. Clearance between impeller elements, and between impellers and casing, eliminates wear and insures constant efficiency.

When Inquiring specify CP7942 — see information request blank, pgs. 2-3

## PRODUCT OF THE MONTH



### HIGHLIGHTS...

- Seven easy turns cover entire range.
- Sturdy lifting frame mounted directly on core.
- Simple, 3-piece core means lower idling loss, low input kva... years of trouble-free service.
- Transformer, reactor coils use common core.
- Compact, solid coil dissipates heat quickly.

MILWAUKEE, WIS.—Allis-Chalmers announces the new Ampac "400" a-c welder... engineered and built during the war to meet 24-hour-day requirements. It employs the simplest possible construction of a continuously variable welder— is exceptionally efficient and rugged. B-6302.

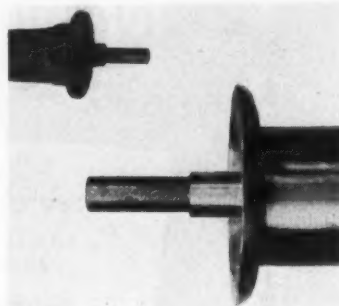
**ALLIS-CHALMERS-MILWAUKEE-WIS.**  
A 1670

When Inquiring specify CP7943 — see information request blank, pgs. 2-3

## New Solutions

### Old Metal Surface Rolls Restored To Reduce Replacement Costs

Reconditioned to give extensive service and save quantities of vital materials



WORN ROLL rebuilt to give extended dependable service

photograph shows the old roll with covering worn off and the head badly cracked. The old rubber was removed and a stainless steel surface applied to the roll and a new stainless steel head and hub added. (see illustration). Results — Substantial savings in critical materials as well as in costs of rolls to users.

RODNEY HUNT MACHINE CO., Dept. CP, Orange, Mass.

When Inquiring specify CP7944 — see information request blank, pgs. 2-3

### Cleaner Ionizes Dirt Particles to Maintain Sugar Purity

Removes particles as small as 1/250,000 of an inch from atmospheric air in sugar plant

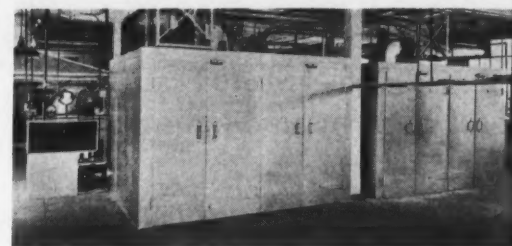
Problem — Proper cleaning of air passing into granulators of sugar plant is highly important factor in maintaining quality of finished product.

Solution — Electrical air-cleaner (Precipitron) was installed in forced air duct that passes warm air through the granulators at rate of 10,000 cfm and clears atmospheric air of dirt particles. In the air cleaning apparatus a 13,000 volt electro-static field is established on the intake side of the cells. Air borne dirt particles are ionized in passing through this field. The charged dirt particles are attracted to alternately charged plates extending 36 inches at right angles to the field. These plates are coated with a light film of oil which assists in holding the attracted dirt particles to the plates. The plates are washed down with hose and water several times during the sugar season. The apparatus draws its power from main line, 110 v. 380 watts.

Results — Tests taken by standard paper disc blackness method showed only slight discoloration amounting to less than five percent on the outlet side of the Precipitron. Simultaneous check made on paper disc on intake side showed heavy concentration of fine black soot-like dust present in the air duct, even though the atmospheric air has passed through mechanical air filters prior to reaching the Precipitron chamber. Particles as small as 1/250,000 of an inch were cleared from atmospheric air.

WESTINGHOUSE ELECTRIC & MFG. CO., Dept. CP, East Pittsburgh, Pa.

When Inquiring specify CP7945 — see information request blank, pgs. 2-3



**KIRK AND BLUM**

### Industrial Ovens

#### SPEED WARTIME PRODUCTION

In plants throughout the nation, Kirk & Blum drying and baking ovens, equipped with modern safety features are turning out faster and better product finishing, stepping-up rate of production and reducing fuel and labor costs.

Whatever your finishing problem may be — no matter how large or small your product — experienced Kirk & Blum Engineers are prepared to design a complete, properly coordinated drying or baking system that will do a BETTER finishing job — at Lower Cost.

Send for Booklet: "Industrial Ovens"

**The KIRK & BLUM Manufacturing Co.**

An Organization of Engineers and Mechanics

2833 SPRING GROVE AVE.

CINCINNATI, OHIO

When Inquiring specify CP7946 — see information request blank, pgs. 2-3

## PACKAGED

### CLEAVER-BROOKS STEAM GENERATORS ARE COMPLETE "PACKAGED" UNITS

Both boiler and integral oil burner are built by Cleaver-Brooks Company into one complete assembly, tested under actual operating conditions before shipment. Responsibility for dependable operation rests entirely with one manufacturer. "Packaged" construction saves substantial installation time and expense.

Write for full information now — for future use — on the many other modern advantages of Cleaver-Brooks steam generators. (20 to 500 HP. — Light or Heavy Fuel Oils).

**CLEAVER-BROOKS COMPANY**  
5124 N. 33rd STREET MILWAUKEE, WISCONSIN

**Cleaver-Brooks** STEAM GENERATORS

When Inquiring specify CP7947 — see information request blank, pgs. 2-3

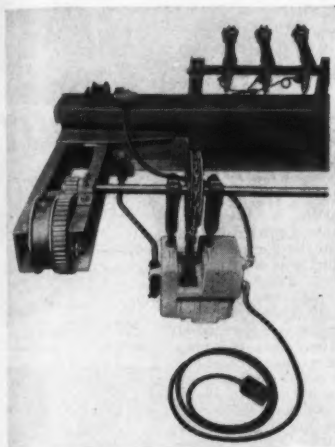
CHEMICAL PREVIEW



## New Solutions

### Unit Electrifies Hand Cranes

Conversion made in 1 hr. on cranes up to 10 tons without machine work or drilling



CRANE DRIVE UNIT

**Problem** — Quick conversion of hand cranes to powered operation rather than replacement sought to speed production, save man-hours.

**Solution** — A new, complete self-contained unit to convert the bridge travel motion of hand operated cranes to electric drive has been designed with the feature that machine work, drilling or fitting is unnecessary in installation. The equipment may be put in service, ready for such powered operation in about one hour. A wrench is the only tool required. Control is by push button hanging to within easy reach within reach from ground. Cranes may be "inched" along the runway, spotted over loads and quickly reversed without undue vibration or shock as a new principal to absorb initial torque of motor is employed. The drive is suitable to convert hand operated cranes or 10 tons of smaller capacity, providing the crane is of the geared type and operated by a chain wheel of 24 inches or smaller diameter.

**Results** — Provides desired conversion without extensive work or delay to regular plant operations. Speeds handling of materials and enables workers to perform crane work with greater ease and efficiency. Accurate control of crane movement. (Literature on request). Unit is named Budget Bridge Drive.

MANNING, MAXWELL & MOORE, INC., Muskegon, Mich.

When inquiring specify CP7948  
— see information request blank, pgs. 2-3

For more information on product at right, specify CP 7949  
... see information request blank between pages 2-3.



**ALL VALVE SEATS  
ARE PORCELAIN  
TO PORCELAIN**

**NO ELECTROLYTIC ACTION  
IS POSSIBLE**

# Y-Type Valves

**NON CORROSIVE  
NON ABSORBENT**

PORCELAIN saves on maintenance and replacements—it adds longer life to installations. There are no parts to wear out—no metal in contact with chemicals—no stuffing box leakage—positive closing of valve seats.

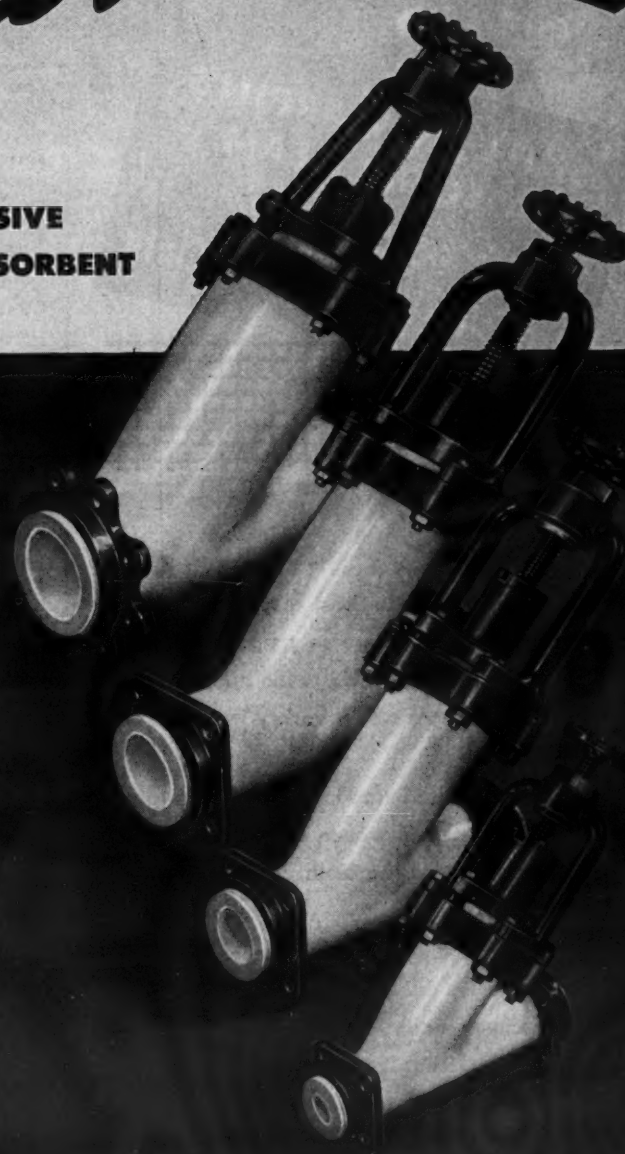
ILLINOIS Porcelain Y-type Valves are easy to operate. They give you an immediate answer for most acid and chemical handling requirements.

Every valve shipped from the ILLINOIS plant is routine tested at 100 pounds pressure for a minimum of one hour to assure a perfect valve seat.

Our experience may be of valuable aid to you at this time—confer with us regarding your valve needs.

Send for latest catalog.

**PORCELAIN Saves  
CRITICAL MATERIALS**



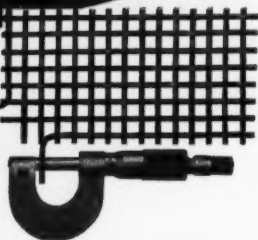
# ILLINOIS ELECTRIC PORCELAIN CO.

MACOMB, ILLINOIS



**SKILL IN WARPING  
A LOOM BEAM  
is reflected in  
Precision Woven Wire Cloth**

**NEWARK  
for ACCURACY**



**WORKING** with the best quality wire it is possible to buy, we rely upon the most reliable of skills — the skill of the human mind and hand — to get all Newark Wire Cloth off to a good start.

Warping the Loom Beam is the key to the precision to be found in woven wire cloth. Without the utmost skill, no cloth can be fully accurate in its mesh.

In our sixty odd years of service to industry, we have always adhered to a policy of turning out "precision-made" woven cloth because cloth to be serviceable at all must be accurate.

"Newark for Accuracy"

**NEWARK WIRE CLOTH COMPANY**

336 VERONA AVENUE

NEWARK, N. J.

When Inquiring specify CP7950 — see information request blank, pgs. 2-3

Page 12

## New Solutions

### Mineral Wool Insulation Reduces Dryer Bare Heat Loss 90%

*Aids in achieving necessary production  
increase, saves fuel and permits  
closer temperature control*

**Problem** — A typical heat loss problem is illustrated in this example of drier used for drying paper coatings of varnish, lacquers or remoistening gums. Increased production was desired quickly and acquiring another drier entailed delay in securing materials and other difficulties.

**Solution** — The drier operating at capacity dries 2400 sheets of paper 42 x 58 inches in size. Mineral wool insulation was applied to a total area of 504 square feet — two and one half inches thick. The area is operated on a hot face maximum temperature of 400 degrees F. The bare heat loss was estimated at 4,760,000 btu per year.

**Results** — Savings in approximately 4,400,000 btu per year. Estimated fuel savings were: gas, \$2621.00; oil, \$2066.00; coal, \$1440.00 — per year. Easier maintenance of temperature control, improved working conditions were also achieved in addition to better production. Literature describing this and numerous other insulation applications on request. The product in its various forms: loose wool, granulated wool, blankets, insulating blocks and pipe covering is illustrated and described.

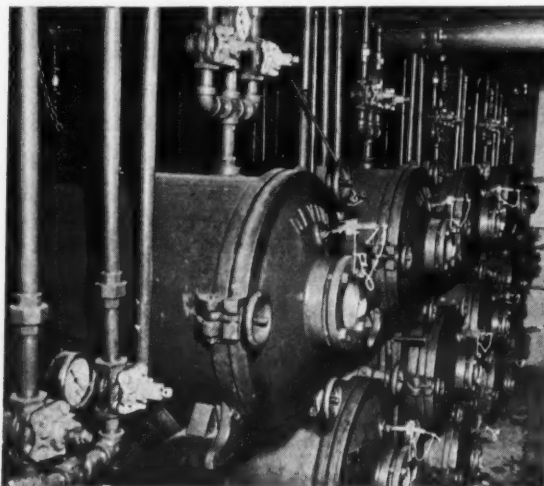
INDUSTRIAL MINERAL WOOL INSTITUTE, Dept. CP, 1441 Lexington Ave., New York, 17, N. Y.

When Inquiring specify CP7951 — see information request blank, pgs. 2-3

### Flowing Drugs Through Lubricated Semi-Steel Plug Valves

*Meet strict requirements for vacuum dryers in  
arsphenamine department of major pharma-  
ceutical manufacturer*

**Problem** — In selecting valves for new vacuum dryers in arsphenamine department large pharmaceutical manufacturer required valves meeting most precise specifications. There are thirty-three vessels in this department. Positive prevention of seepage of vapors from one dryer to another is required as is the prevention of contact of air which would break down the unstable compounds.



VALVES ON DRYERS PREVENT SEEPAGE, AIR CONTACT



### LET'S STRAIGHTEN OUT these contortionists

● Years ago our steam trap piping frequently looked like the freak contortionist of circus and stage. Let's straighten out these contortionists in future steam trap piping by installing only ANDERSON SUPER-SILVERTOP STEAM TRAPS, the inverted bucket steam trap that is piped straight-in-line or as an elbow . . . that requires no extra fittings . . . that saves an hour of installation time per trap . . . that brings you greater condensate capacity, positive operation, ease of inspection and a longer service-life. These advantages of Anderson Super-Silvertop Steam Traps are described in the free booklet, "How to Choose a Steam Trap," which is yours for the asking.

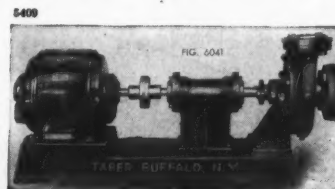


**THE V. D. ANDERSON COMPANY**  
1954 WEST 96th ST. • CLEVELAND, OHIO

When Inquiring specify CP7952 — see information request blank, pgs. 2-3

### Will your pumps be obsolete?

Many plants will one day face costly "one-purpose" pump waste. To reduce this waste, Taber Pumps are designed for wide adaptability . . . merely changing Impeller and Casing fits them for various services. This feature, plus time-proved, high practical performance, make Taber Pumps more suitable for the processing industry. For detailed, helpful information on this new Taber series "General-Use" Horizontal Centrifugal Pumps—write for Bulletin CLVS-339.



◆ **TABER "GENERAL-USE" CENTRIFUGAL PUMP.** Never obsolete. Easily adapted to many jobs. Has over-size ball bearings, extra shaft diameter, deeper stuffing box.

**TABER PUMP CO.**  
(Est. 1859)  
322 Elm St., Buffalo, N.Y.

When Inquiring specify CP7953 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## New Solutions

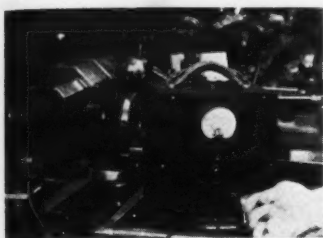
**Solution** — One inch semi-steel lubricated plug valves (Nordstrom No. 214) were used. A vacuum of 10 millimeters is readily connected to both vacuum systems through, and isolated from each by one of the valves referred to previously.

**Results** — This allows any vessel to be cut into either vacuum system so that dissimilar solvents are not mixed and provides the prevention of seepage and air contact as required. (Illustration and data — courtesy of E. R. Squibb & Sons, New York, N. Y.) Complete information regarding this and similar equipment available upon request. **MERCO-NORDSTROM VALVE CO.**, Dept. CP, 400 Lexington Ave., Homewood, (Pittsburgh), Pa.

When inquiring specify CP7954 — see information request blank, pgs. 2-3

## Vibration Velocity Meter Detects Vibration in Grinding Machines

*Reveals cause of rejects in making high precision taps; has wide plant and laboratory applications*



AMPLIFIER UNIT AND VELOCITY UNIT

**Problem** — Manufacture of high precision taps was encountering vibration in grinding machine that was causing a large number of rejects. The machine and its gears and various parts were apparently in good condition.

**Solution** — In order to locate definitely the cause of this difficulty a vibration meter was employed. This quickly revealed that the cause of the vibration and the rejects lay in some gears that were to all general indications functioning properly.

**Results** — Immediate replacement of these gears remedied the trouble and the machine was put back into thoroughly satisfactory production. In addition to detecting troublesome vibration in equipment the meter also proved very useful in determining low vibration areas in the plant, facilitating placement of new equipment where maximum operating efficiency was assured.

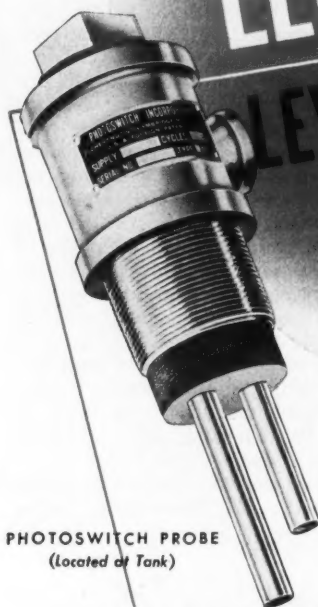
**Description** — The vibration-velocity meter is a portable, general purpose instrument of wide range for the measurement of the vibration of large or small bodies in any single direction from horizontal to vertical. The meter consists of two units — the velocity unit and the amplifier unit. The velocity unit converts mechanical vibrations by means of a coil moving in a permanent magnet field. The vibrations to be measured are transmitted to the coil by holding the unit in the hand and pressing the contact rod which extends from the front of the cylindrical case, against the vibrating object. The amplifier unit consists of a portable, self-contained, battery operated, two stage amplifier of sturdy construction. An integrating unit is available for obtaining measure of vibrating displacements directly independent of frequency. The instrument on the amplifier unit gives a reading of the vibration detected by the velocity unit in mils per second average vibration velocity, or mils total displacement when the integrating unit is used. The amount of vibration can be analyzed graphically by use of an oscilloscope fed by the amplifier.

**GENERAL ELECTRIC CO.**, Dept. CP, Schenectady, N. Y.

When inquiring specify CP7955 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

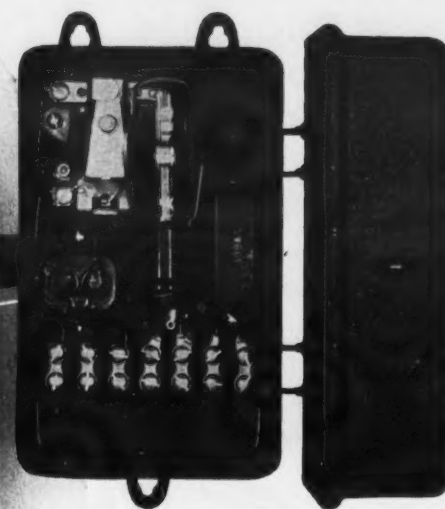
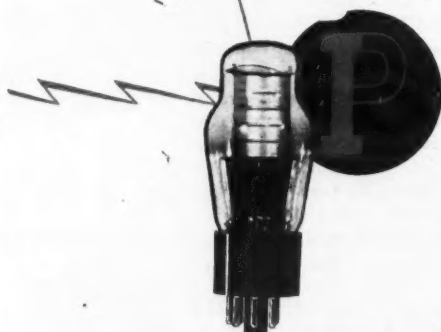
# PHOTOSWITCH ELECTRONIC LEVEL CONTROL



PHOTOSWITCH PROBE  
(Located at Tank)

TODAY, IN HUNDREDS OF INDUSTRIAL AND CHEMICAL PLANTS, MODERN PHOTOSWITCH INSTALLATIONS:

- Control pumps to maintain constant liquid level.
- Provide high and low level safeguards.
- Maintain interface between two liquids.
- Control liquids in mixture, for desired concentration.
- Govern pump programming operations.
- Detect water accumulation in oil or gasoline storage tanks.
- Provide complete boiler feedwater control.



PHOTOSWITCH CONTROL

**FLOATLESS** Maintains levels *electronically*. Sensitive probe actually "feels" liquids and powders . . . eliminates complicated float and pressure switches.

**MAINTENANCE-FREE** Electronic operation ends friction — wear. Prevents costly shut-downs . . . solves wartime replacement problems.

**CONTROLS ANY MATERIAL** Handles acids, oils, resins, alkalis, petroleum products, granular solids or dry powders.

**MAINTAINS LEVELS ACCURATELY** Electronic principle of operation provides fraction of an inch control.

**SAFE WITH COMBUSTIBLES, EXPLOSIVES** Only microamperes of current — at low voltage — pass through material under control.

**ELIMINATES CORROSION PROBLEMS** Only metal rod is immersed in liquid, eliminating corrosion problems encountered with mechanical devices.

**EASILY INSTALLED** Probe fitting is threaded into tank and wired to electronic control. Probe extends from fitting into tank to desired level.

**UNLIMITED LIFE** A Photoswitch installation contains no moving parts — nothing to wear out or fail in operation . . . is guaranteed for an unlimited life.

*There is a Photoswitch Level Control to meet every need. Write for complete catalogue information.*

## PHOTOSWITCH INCORPORATED

PHOTOELECTRIC & ELECTRONIC CONTROLS FOR EVERY INDUSTRIAL PURPOSE

CAMBRIDGE, MASS. • District Offices IN ALL PRINCIPAL CITIES

➔ For information on turbidity control . . . smoke density indication . . . timing . . . counting . . . automatic inspection . . . conveyor control . . . machinery safeguards . . . and similar automatic control problems, consult PHOTOSWITCH, INCORPORATED.

When inquiring specify CP7956 . . . see information request blank, pgs. 2-3

If this gauge  
is knocked out  
of adjustment—

## A TWIST OF THE "Recalibrator" SETS IT RIGHT



• For more than 75 years Marsh has manufactured fine pressure and vacuum gauges—gauges that operating men know give them the best in accuracy and stamina.

But even the best gauges can be knocked out of adjustment by sudden jolts and shocks. With a Marsh "Recalibrator" gauge, the twist of a screwdriver sets it right so that accuracy is restored for all points on the scale. It is a basic correction—actually recalibrates the gauge by re-establishing the proper relation between bourdon tube and the movement.

When you need a gauge, make it a point to look for that "Recalibrator". It is available in all Marsh Gauges, standard in all Marsh Dial Thermometers.

JAS. P. MARSH CORPORATION  
2095 Southport Avenue, Chicago 14, Ill.

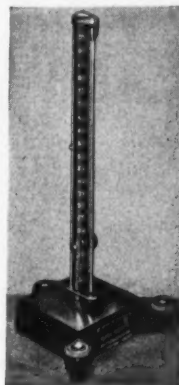
# MARSH GAUGES

When inquiring specify CP7957 — see information request blank, pgs. 2-3

## ★ INSTRUMENTS of CONTROL

### Meter Measures Resiliency of Extensible Plastic Compounds

*Useful in development of rubber compounds; tests considered index to other properties*



RESILIOMETER registers "bounce" of rubber

**Uses** — For measuring the resiliency of rubber and extensible plastic compounds.

**Operation** — Resiliency is indicated by the rebound of a weighted plunger dropped on the test specimen from a predetermined height.

**Description** — Tests are of importance as resiliency is index of other important properties. The device is found useful in the development of rubber and extensible compounds, for measuring rate and state of cure, for matching competitive compounds, for factory control tests on cured samples of mixed batches, for controlling the quality of the finished product without destroying the product, for comparing heat build-up of various products (the higher the resiliency, the lower the heat build-up) for measuring the plasticity.) The manufacturer named

below has recently acquired sole manufacturing right this unit known as Bashore Resiliometer.

PRECISION SCIENTIFIC CO., Dept. CP, 1750 Springfield Ave., Chicago, 47, Ill.

When inquiring specify CP7959 — see information request blank, pgs. 2-3

### Electronic Control Has Wide Use in Automatic Control Set-Ups

*Designed to act as buffer control element operating between primary sensitive element and power operating control element*

**Uses** — For bringing about improved performance in many types of automatic control set-ups. Designed to make practical close approach to zero tolerance in regulating variables in industrial processes - pressure, temperature, liquid level, flow, speed, motion, voltage, air etc.

**Features** — Especially suitable for the control of proportioning or positioning control elements such as valves operating from reversible motor drives. Silent operation as no relays are used. High speed operation. Immediate response to sensitive actuation.

**Description** — The unit may be considered a sort of "buffer" control element operating between the primary sensitive element and the power operating (in many cases final) control element. It requires negligible power for actuation. It allows the energizing of these power control elements without necessitating the use of the slower actuating types of primary control elements which would otherwise be required in many applications. It operates from sensitive elements of many types and its output circuit can accommodate the alternate energizing of loads within the range of instruments which may be connected to it. They might be motors for valve control blower fans or heating elements. One of the two output circuits is always energized but both cannot be energized simultaneously with contactor type actuating devices. Since one or the other of the circuits must be in operation at any given instant there will be an exact response to the performance of the primary sensitive element. The unit does not limit the full utilization of the performance of any other control elements. Electronic in nature it has no moving parts to wear out. Housed in all steel box. Provisions made for connection of 115 v., 60 c., AC power line, the actuating circuit and the two control sections. Light weight, 11 1/2 x 7 1/8 x 3 5/8 inches. Booklet "P" describing the "Flashatron" on request.



UNIT for improving precision operation in automatic control set-ups

THORDASON ELECTRIC MFG. CO., Dept. CP, 500 West Huron St., Chicago, Ill.

When inquiring specify CP7960 — see information request blank, pgs. 2-3

## Faratron Electronic Level Controls

No Moving Parts

No Floats

**For ALL TYPES OF LIQUIDS in TANKS, VATS, RESERVOIRS, BOILERS, KETTLES, COOLERS CANS, FREEZERS, PASTEURIZERS**

FARATRON ELECTRONIC LIQUID LEVEL CONTROL accurately indicates or regulates either fullness or emptiness or both, by signals or by operation of valves or pumps. Non-mechanical; operated by electronics. Absolutely sanitary. Unaffected by pressure or temperature. Easily installed — needs no attention. Most economical with long life.

Write for Bulletin 3431 for details of all models and prices.

LUMENITE ELECTRIC CO.  
407 S. Dearborn CHICAGO



When inquiring specify CP7958 — see information request blank, pgs. 2-3



## INSTRUMENTS

### Rupture-Proof Gas Loaded Diaphragm In Pressure Reducing Regulator

Refills smaller cylinders from cylinder manifold system; gives greater pressure accuracy

**Uses** — Designed particularly for the purpose of refilling to 400 and 800 pounds per sq. in. respectively smaller cylinders from cylinder manifold systems.

**Features** — Specially designed diaphragm gas loaded instead of spring loaded, and so constructed that damage to or rupture of that diaphragm is practically impossible.

**Description** — The loading pressure of the main regulator is controlled by a built-in pilot regulator, the tension screw of which is so arranged that it will not permit a diaphragm loading pressure beyond a predetermined maximum. Since the major regulator's diaphragm is controlled by this pilot regulator, any pressure loss is automatically compensated for by this regulator. When the loading pressure exceeds a desired maximum, and adjustable relief valve reduces this pressure to normal. If the operator wishes to diminish a previously set operating set operating pressure, he releases the tension screw of the pilot regulator and exhausts the dome pressure by a non-leak valve. This model (No. 4000-1000 pilot type) is one of several "Gas-o-dome" pilot regulators. Complete information on request.

VICTOR EQUIPMENT CO., Dept. CP, 844 Folsom St., San Francisco, Cal.

When inquiring specify CP1961  
— see information request blank, pgs. 2-3



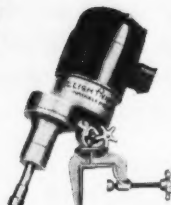
REGULATOR . . loading pressure controlled by built-in regulator

For more information on product at right, specify CP 7962  
... see information request blank between pages 2-3.

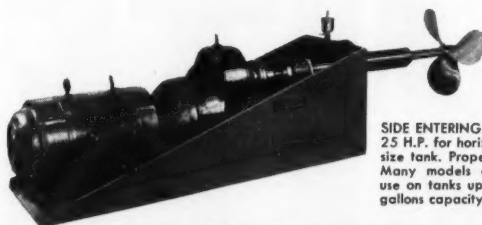
## Process Adapted



TOP ENTERING MIXERS.—A wide range of sizes for large or small tanks—1/4 to 50 H.P. for vertical use on pressure or vacuum vessels. Integral mounting, turbine and propeller types.



PORTABLE MIXERS.—1/4 to 10 H.P. for rim attachments to open tanks. Gear and direct drives. Many exclusive conveniences. Off-center positioning. Extended bearing sealed against oil and grease leaks.



SIDE ENTERING MIXERS.—1 to 25 H.P. for horizontal use. Any size tank. Propeller type only. Many models and drives. In use on tanks up to 5,000,000 gallons capacity.

### Do you need a Propeller or Turbine Type? Do you need 1/40th or 50 H.P.?

There is one size and model of mixer which will best answer the requirements of each individual mixing job. "LIGHTNIN" and MIXCO Mixers and Agitators are available in sizes ranging from 1/40th H.P. laboratory models to 50 H.P. agitators. Each size and model has a wide range of applications, but each also has definite limitations.

Perhaps you need a turbine type instead of propeller. If that is the case, Mixing Equipment Company have available a variety of turbines to meet every agitation requirement. The right type will greatly increase the efficiency of the process.

That is why it is advisable to have Mixing Equipment Company engineers recommend the equipment for your particular purpose. In some cases they have recommended doubling the size of the mixer with the result of cutting both mixing time and power consumption in half! Or it is possible to use a smaller mixer and thereby reduce installed H.P. and initial cost for simple blending.

You can depend upon Mixing Equipment Company engineers to recommend the right mixer for your job because all types are manufactured. Twenty-three years of experience has resulted in an organization, research facilities and skill which qualify Mixing Equipment Company as a leading authority in the whole broad field of agitation.

Mixing Equipment Company offers its services in the solution of any problem involving controlled recirculation of liquids to produce physical and chemical changes, as included in the table herewith.

Blending Miscible Liquids	Mixing Immiscible Liquids	Crystal Size Control	Gas Absorption & Dispersion	Suspension of Solids	Heat Transfer
Simple Mixing of soluble liquids as in reducing concentration.	Washing of Liquids Extraction Contacting Caustic Treating Emulsions	Precipitation Evaporation Systems	Hydrogenation Aeration Gas Scrubbing Chlorination Gas Washing	Slurries Slaking Lime Suspension of: filter aid, activated carbon, Fullers Earth, Crystals while dissolving.	Still Evaporators Reactor Vessels Heating Cooling

### The following Mixing Equipment Company representatives will be at the Exposition of Chemical Industries:

C. F. DONOVAN, Manager, New York office  
G. J. MOORHEAD, Eastern Divisional Sales Manager  
C. C. STEWART, New England Representative  
E. S. BISSELL, Sales Manager & Technical Director  
F. D. MILLER, Chief Engineer  
L. R. GORDON, Vice-President  
F. H. GORDON, Jr., President

## MIXCO TURBINE AGITATORS

**LIGHTNIN**  
TRADE MARK REG. U.S. PAT. OFF.

**MIXCO**

There is a process adapted agitator for every size and shape of tank and every operation; for batch or continuous operation. Because Mixing Equipment Co. products include all types of fluid agitators, you can obtain from them an impartial recommendation for the most economical solution of any problem involving fluid agitation. Mixing Equipment Co. engineers will gladly assist you in solving your particular agitation problem.

**MIXING EQUIPMENT COMPANY, INC.**  
1028 GARSON AVENUE • ROCHESTER 9, NEW YORK

### MIXING EQUIPMENT CO., INC.

1085 Garson Avenue, Rochester 9, N. Y.

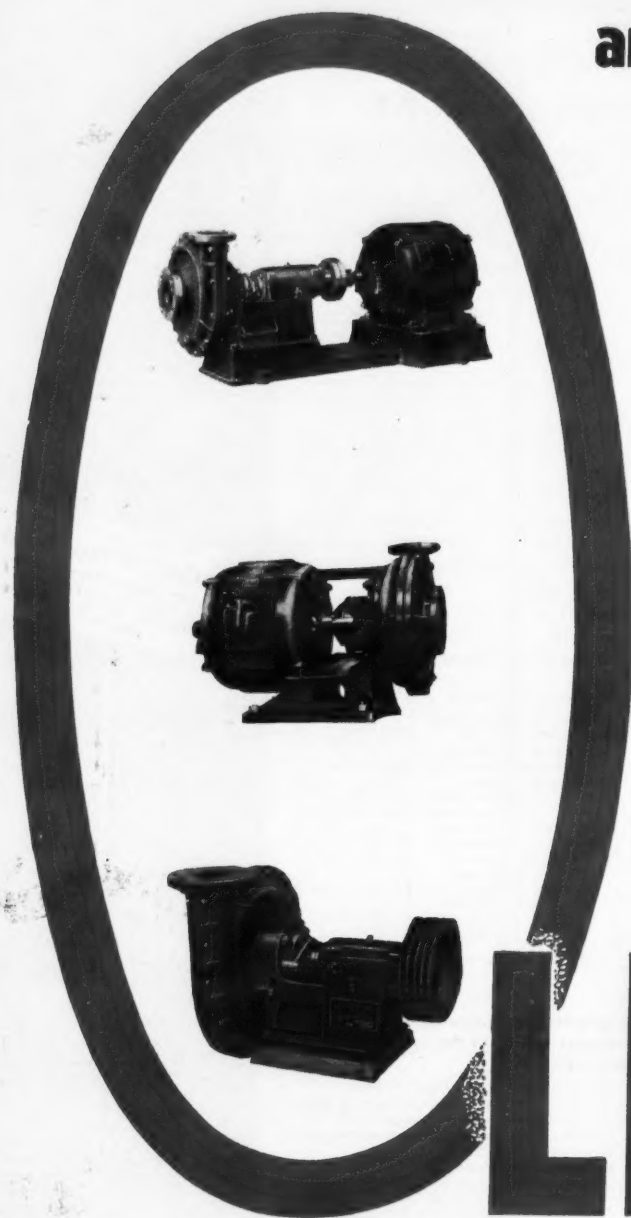
Please send me the literature checked:

- ☐ B-76—Side Entering Mixers  
☐ B-78—Top Entering Mixers  
☐ B-75—Portable Mixers  
☐ B-69—Air Driven Mixers  
☐ B-77—Laboratory Mixers  
☐ Mi-11—Operating Data Sheet

Name.....  
Title.....  
Company.....  
Address.....

Bring your mixing problems with you to  
**BOOTH No. 613**  
at the 19th Chemical Exposition, Dec. 6th  
to 11th, where Mixing Equipment's Factory  
Engineers will be glad to discuss  
them with you.

# Pumps that have the necessary durability to handle acids . . . and corrosive solutions



**O**LIVITES keep on pumping! Durability is of major importance in a pump handling a solution that is continually tearing at its vitals. Every part of the Olivite Acid-Handling Pump . . . its entire assembly . . . has "maximum corrosion resistance" stamped all over it.

Casing, cover and impeller are protected by strong, durable OLIVITE (a rubber-base material) or OLIVEX (a high tensile resin plastic). A sleeve of selected material protects the shaft. Packing is kept in good working order by special gland, lantern ring and floating stuffing box.

And coupled with durability is the hydraulic efficiency to make the Olivite a doubly good investment. There are three sizes of Olivites available each with direct or V-belt drive. Get in touch with our nearest office for our recommendations. Bulletin 308 gives details.

# LIVITE

NEW YORK



CHICAGO

SAN FRANCISCO

OLIVER UNITED FILTERS INC.

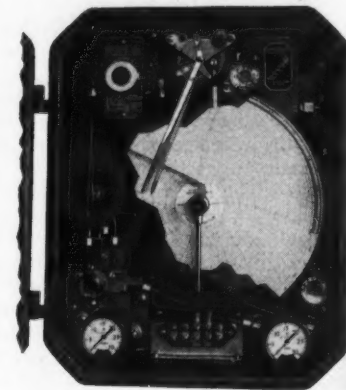
WESTERN OFFICE  
OAKLAND, CALIF.

11-OUF-13

## INSTRUMENTS

### Pneumatic Set Controller In Both Indicating and Recording Forms

*Adapted to a wide range of control operating in processing and in air conditioning*



PNEUMATIC CONTROLLER

**Uses** — Designed for operations where it is desired to have a controller whose control point, as indicated by a set pointer, would be automatically adjusted by variations in output air pressure from another remotely located instrument which may be an indicator, recorder or controller. Controls water jacket temperature of reactors in synthetic rubber production. Controls speed of internal combustion driven air compressors. Also air conditioning uses.

**Description** — This controller is fundamentally the makers standard (Fulscope) controller with an additional unit to convert changes in input air pressure into linear movements on the set pointer. The magnitude of the linear set pointer movement per pound change in input air pressure is governed by the setting of the adjustment dial provided in the unit. The unit also provides for set pointer adjustments in either direction for an increase in input air pressure, and for limiting the travel of the set pointer within given limits. The instrument is also equipped with a manual set pointer adjustment feature. Bulletin 98158 on request.

TAYLOR INSTRUMENT CO'S., Dept. CP,  
Box 110, Rochester, N. Y.

When Inquiring specify CP7963  
— see information request blank, pgs. 2-3

For more information on product at left, specify CP 7964  
... see information request blank between pages 2-3.





## NEW MERIAM SIGHT FEED BUBBLER FOR Purging LINES AND OTHER APPLICATIONS

★ Widely used for purging lines and for operating tank liquid level gauges... also in chemical processing, with different liquids in the bowl, to determine the presence of undesirable or dangerous materials in gases.

When the bubbler bowl is filled with liquid a visual indication is given by bubbling. The adjustable needle valve at top controls the rate of bubbling.

This Meriam Sight Feed Bubbler with bowl of Pyrex glass is good for line pressures up to 30 lbs. per sq. in.; of plastic, for pressures up to 100 lbs. Sturdily built for lasting, trouble-free operation.

Available in ring type (illustrated) or strap type — both types providing for removal of bubbler bowl. For complete information on this new Meriam product write for Bulletin 21.

### THE MERIAM COMPANY

1969 West 112th St. Cleveland, Ohio

# MERIAM

SINCE 1911

MANOMETERS, METERS AND GAUGES FOR THE ACCURATE MEASUREMENT OF PRESSURES, VACUUMS AND FLOWS OF LIQUIDS AND GASES

When inquiring specify CP7985 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

## INSTRUMENTS

### Laboratory Furniture & Equipment

An unusually complete selection of laboratory furniture and equipment is described and illustrated in interesting and practical detail in a 224 page catalog conveniently arranged in several sections. Standard sectional laboratory furniture units are given a prominent place and their adaptability in providing custom built installations to suit individual needs is emphasized. Specifications are arranged for easy reference and in addition there are numerous suggestions of value in planning and setting up laboratories or enlarging their facilities. Of special interest to all concerned with industrial laboratories is the manner in which much of this data is arranged — major items used in laboratories in specific fields are grouped together providing easy comparison and selection. The equipment described is known under the name "Steelab." The catalog is number 43.

LABORATORY FURNITURE CO., Dept. CP, 3718 Northern Blvd., Long Island City, N. Y.

When inquiring specify CP7986 — see information request blank, pgs. 2-3

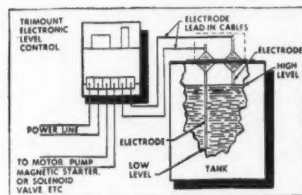
### Floatless Liquid Level Controls

Twenty-eight page catalog contains technical information regarding all electric floatless liquid level control and marks the various development this organization has made in floatless control design. Primary equipment such as electrodes, relays, special controls and panels, AC automatic starter and relay combinations waterproof enclosures and wiring diagrams are included. Catalog 943 on request.

B-W CONTROLLER CORP., Dept. CP, Birmingham, Mich.

When inquiring specify CP7987 — see information request blank, pgs. 2-3

## Electronic LEVEL CONTROL



### FOR ALL LIQUIDS AND CONDUCTING SOLIDS

Trimount Electronic Level Controls are for maintaining or keeping within desired limits the level of liquids or conducting solids within open or closed tanks, hoppers, bins, etc., and/or indicating the level by signals. This Control will operate solenoid or motor-driven valves, pumps, lights, bells, or other electrical devices. Absence of voltage permits use with all types liquids; the Control does not affect and is not affected by the product in the container. For full details write today and ask for literature. Trimount Instrument Company 525 Plymouth Ct., Chicago 5, Illinois.

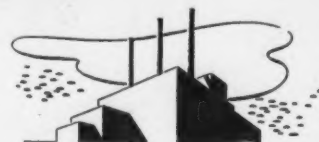
# Trimount

INSTRUMENT CO.

When inquiring specify CP7968 — see information request blank, pgs. 2-3

## INSTRUMENTS FOR EXACTING INDUSTRIES

BUY  
WAR  
BONDS



CAMBRIDGE offers innumerable, outstanding, special purpose instruments for determination of temperature, moisture and acidity; for continuously analyzing many gases and liquids and for measuring various physical properties of solids.

### CAMBRIDGE BUILDS:

Exhaust Gas Testers  
Moisture Indicators  
Fabric Permeameters  
Pyrometers  
O<sub>2</sub> and H<sub>2</sub> Recorders  
Vibrographs

Fluxmeters  
Electrometers  
Galvanometers  
pH Meters and Recorders  
Voltmeters  
□ (—Polarographic Analyses)

Other precision, mechanical and electrical instruments. Send for bulletins describing instruments of interest to you.

CAMBRIDGE INSTRUMENT CO., INC.  
3732 Grand Central Term., N. Y.

## CAMBRIDGE PRECISION INSTRUMENTS

When inquiring specify CP7969 — see information request blank, pgs. 2-3

When you want accurate and dependable automatic temperature or humidity control for Industrial Processes or Air Conditioning Systems call in a Powers engineer. With a very complete line of self-operating and compressed air operated controls we are well equipped to fill your requirements.

**Write for Circular 2520**

**THE POWERS REGULATOR CO.**  
2756 Greenview Avenue, CHICAGO

Offices in 47 Cities—See your phone directory

**50 Years** of Temperature and Humidity Control ★

When inquiring specify CP7970 — see information request blank, pgs. 2-3



## Performance plus -- FOR YOUR LABORATORY

When it's a question of performance, discriminating laboratory technicians will want to benefit by the results obtainable with the new Lindberg Box Type Laboratory Furnace. Ash determinations, fusions, ignitions, drying precipitates, heat treating small parts and many other operations, are efficiently and accurately handled by this single unit.

Careful design and durable construction, as well as appearance, add that certain "plus" for which all Lindberg equipment is widely known. Let's look over these important features.

### Appearance

- Streamlined and clean. Adds to modern laboratory standards.

### Construction

- Rugged. Heavy sheet metal housing encloses courses of selected high temperature insulating slabs and refractory brick.
- Vertical lift mechanism raises door so that hot side is always facing away from operator.
- A convenient ledge is revealed when door is open.
- Heavy rod type low voltage nickel chromium elements. Excellent for temperatures up to 2000°F. Long life, few replacements.
- Built-in transformer provides reduced voltage.

### Operation

- Lindberg Input Control accurately provides "stepless" apportioning of heat.
- Indicating pyrometer registers the temperature throughout the range of furnace applications.

- Index pointer on pyrometer gives visual check on furnace control.
- Signal light shows when furnace is in operation.

### Two Sizes

- Temperature range up to 2000°F maximum.

#### CHAMBER SIZES

B-2 4½" wide x 10" deep x 4" high  
B-6 7½" wide x 14" deep x 5½" high

Other "performance plus" equipment are the Combustion Tube and Crucible type furnaces as well as the corrosion resisting Hot Plates, all available in convenient laboratory sizes. See your usual laboratory equipment dealer—he will gladly give you further information and prices.

# LINDBERG

Well-known Throughout the World as the Leaders in Developing and Manufacturing Industrial Heat Treating Equipment



LINDBERG ENGINEERING COMPANY  
2450 WEST HUBBARD STREET, CHICAGO 12, ILLINOIS

**SOLD EXCLUSIVELY THROUGH LABORATORY EQUIPMENT DEALERS**

When inquiring specify CP7971 . . . see information request blank, pgs. 2-3

## INSTRUMENTS

### Preliminary Test Bomb For Use In Making Tests at High Pressures

Tests chemical reactions; designed for operation at maximum internal pressure of 10,000 psi

**Uses** — Intended for making preliminary tests of chemical reactions at high pressures, with safety and convenience.

**Features** — Calculated bursting pressure is over 40,000 pounds per square inch. Valve in head permits charging at pressures as high as 5000 pounds per square inch.

**Description** — As normally supplied the pressure seal is made by a copper gasket (totally inclosed for safety) between the head and the mouth of the bomb. Screwed into a standard superpressure opening of the company's manufacture for ¼ inch o.d. tubing in the head is a needle valve with side outlet for the same type of construction. No opening is normally supplied in the bottom of the bomb. Where it is desired to maintain flow within the chamber, the bomb can be supplied with connection for ¼ inch o.d. tubing in bottom, together with a plug to seal the bottom opening when not in use. Standard construction is of high strength steel. Each bomb is tested individually to 15,000 pounds per square inch, and is intended for safe operation at a maximum internal pressure of 10,000 pounds per square inch. The valve in the head will seal the contents of the bomb up to the full working pressure of 10,000 pounds per square inch.

AMERICAN INSTRUMENT CO., Dept. CP, 8010 Georgia Ave., Silver Spring, Md.

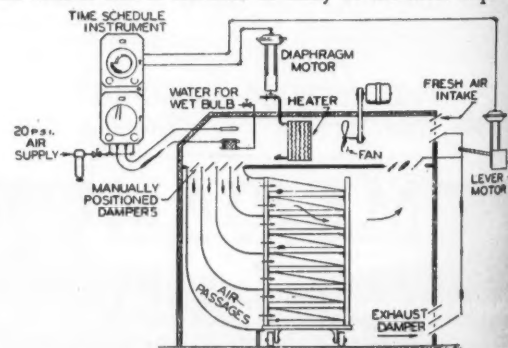
When inquiring specify CP7972 — see information request blank, pgs. 2-3

### Automatic Control Systems For Tunnel, Rotary, Cabinet Dryers

Instruments meet demands imposed by type of dryer, nature of process; protect quality

**Uses** — The instruments described here are designed for the automatic control of temperature and humidity in food dehydration as well as other processing operations. Widely adaptable to varying requirements. Incorporated in complete control systems designed by the manufacturers for the various types of dryers now available.

**Description** — These instruments are designed to furnish the control that is essential in many of the most important



CONTROL SYSTEM FOR COMPARTMENT DRYER

CHEMICAL PREVIEW



## INSTRUMENTS

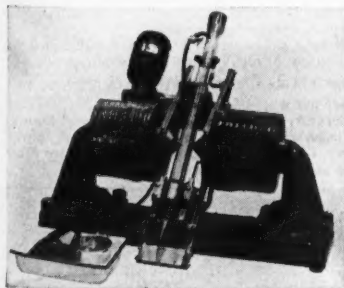
steps in food drying. (1) Product preparation, for vegetables a blanching method to assure complete inactivity of the enzymes peculiar to the product. For meat — a proper cooking procedure. Retention of flavor, food value. (2) Falling rate period. During relatively brief interval referred to as the period of constant rate drying a dry bulb temperature can be maintained well above the established maximum safe product temperature for the reason that the product temperature will approximate that of the wet bulb. Then the process enters the longer "Falling rate period" when moisture is drawn from inner portions of the product. It is then important that dry bulb temperatures be maintained according to predetermined safe schedule. (3) System that accurately maintains drying schedule dictated by product, process and type of dryer involved, avoiding "case hardening" and product damage. For example adjustable sensitivity controller (Fulscope) is used in a tunnel dryer installation in each of two sections. An indicating instrument controls the primary section while a recorder is used in the dry end. A compartment dryer installation (illustrated) automatically controls the entire drying procedure from the start to the final point of required residual moisture with one instrument a time schedule recorder. Dryer is loaded and a button in case of recorder pressed to start its mechanism. The indicating controller referred to is for exact control of blanching or cooking operations. A single duty instrument (controlling one temperature or one pressure). High or full range sensitivity. Time schedule controller permits accurate repetition of predetermined control schedule of one or of two related temperatures, such as wet and dry bulb schedule based on rate of drying curve. Well suited to control of compartment dryers. Recording controller for accurate measurement and control of wet and dry bulb temperatures in regulation of humidity as in tunnel dryers. Devices related to these instruments include diaphragm valves, lever motors and precursors — for settings of diaphragm valves and lever motors. Literature and detailed information pertaining to specific requirements on request.

TAYLOR INSTRUMENT COMPANIES, Dept. CP, Rochester, N. Y.

When inquiring specify CP7973 — see information request blank, pgs. 2-3

### Magnetic Metal Content Tester

*For rapid laboratory determination of magnetic content of iron ore or any substance*



Magnetic Separator

**Uses** — This tube type magnetic separator has been designed to permit an accurate, rapid laboratory determination of the magnetic content of an iron ore or the magnetic content of any substance.

#### Description —

This device is described as providing a thoroughly reliable analysis within ten or fifteen minutes. Complete information regarding this magnetic tube type tester and its various applications to specific requirements is available upon request.

DINGS MAGNETIC SEPARATOR CO., Dept. CP, 509 East Smith St., Milwaukee, 7, Wis.

When inquiring specify CP7974 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

# Electronics IN INDUSTRY

IN 194... M-H/Brown Electronic Recording and Control Instruments will usher in a new era in peacetime production.

In the manufacture of chemicals, petroleum products, steels, textiles, rubber, ceramics, paper, foods—and other products, M-H/Brown Electronic Instruments will provide a new conception of greater precision in measuring and controlling industrial processes.

We are proud of the M-H/Brown background of over 100 years' experience in instrument engineering which pioneered electronic instrumentation.

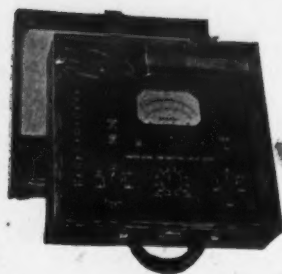


Today these instruments are producing the tools of war. When peace comes they will be available to industry. *M/H Brown Electronics are coming.* THE BROWN INSTRUMENT COMPANY, 4421 Wayne Avenue, Philadelphia, Pennsylvania, a division of MINNEAPOLIS-HONEYWELL REGULATOR COMPANY, Minneapolis, Minnesota. Offices in all principal cities. 119 Peter Street. Toronto, Canada — Wadsworth Road, Perivale, Middlesex, England — Nybrokajen 7, Stockholm, Sweden.

Instruments by **BROWN** and Controls by

When inquiring specify CP7975 . . . see information request blank, pgs. 2-3

# INDUSTRY KEEPS FIT ELECTRICALLY WITH WESTONS



Industry's production figures bear testimony to the outstanding contribution plant maintenance men are making to war plant efficiency. Despite obstacles such as materials' scarcities and limited manpower, electrical equipment—old and new—is being kept constantly fit for full-scale output.

As part of the efficient maintenance combat team, WESTON test instruments play an important role. For in addition to their trustworthy indications, they also provide features which greatly simplify preventative maintenance procedure. In less time—at far lower cost—electrical equipment is being kept fit with dependable WESTONS. Weston Electrical Instrument Corporation, 586 Frelinghuysen Avenue, Newark, New Jersey.

## WESTON Instruments

When inquiring specify CP7976 — see information request blank, pgs. 2-3

## INSTRUMENTS

### CO<sub>2</sub> Analyzer And Calculator Give Accurate Furnace Efficiency Test

*Designed to aid in stretching steam capacity, cutting fuel costs and furnace maintenance*



PORTABLE CO<sub>2</sub> ANALYZER

carrying case including all standard accessories which are primary flue filter, secondary flue filter, hand aspirator bulb and rubber tubing. The flue filter consists of flue filter frame with replaceable filtering thimble and hose nipple fitting. The unique fire efficiency finder is included with the kit. A flue gas sample is pumped into the in-

**Uses** — This portable CO<sub>2</sub> analyzer is designed to provide easy method of making accurate flue tests.

**Features** — This new model has been simplified and a complete CO<sub>2</sub> test can be made easily in about 40 seconds. No valves, clamps or leveling bottle to operate.

**Description** — The complete outfit is packed in a sturdy

## ACCEPTED STANDARD for Wear Tests in Chemical Labs



*Taber*  
**ABRASER**

● The Taber Abraser provides the required standard, constant tests to accurately compare and evaluate wear qualities of surface finishes and fabrics. Scientific wearing action by two rotating "Calibrase" wheels against a 'C' specimen mounted on revolving turntable, is recorded in terms of "wear cycles" on built-in counter. Use the Taber Abraser as your standard for wear tests. Write for Bulletin 4012 NOW.

### TABER INSTRUMENT CORPORATION

111CP GOUNDRY STREET, NORTH TONAWANDA, N. Y.

Designers and Builders of Scientific and Precision Apparatus

When inquiring specify CP7978 — see information request blank, pgs. 2-3



Within the 224 pages of this catalog and manual with over 800 illustrations — are the answers to your laboratory equipment and planning problems.

At your fingertips for ready access — your laboratory standards and samples accommodated in quality-built "Steelab" units. One of the many specialized items you will find in this comprehensive book.

Send for your free copy of catalog #43 on your business or professional stationery.



5500  
SAMPLE STORAGE CABINET



TYPE C DRAWER

TYPE B DRAWER

TYPE A DRAWER



## LABORATORY FURNITURE COMPANY INC.

37 - 20 NORTHERN BOULEVARD • LONG ISLAND CITY 1 • NEW YORK CITY, N. Y.

When inquiring specify CP7977 . . . see information request blank, pgs. 2-3

### Ready Now! New PYREX brand BALL AND SOCKET GROUND JOINTS



No. 6760

The same high quality grinding and other features characteristic of "Pyrex" Standard Taper (T) Ground Joints have been applied to this new line of Ball and Socket Joints.

Accurate, durable and uniform in quality, these new joints, balanced for mechanical strength, chemical stability and heat resistance, are made of Pyrex brand Chemical Glass No. 774. All are completely fabricated in the apparatus shop of the Corning Glass Works—your assurance of highest quality workmanship. The Corning Lamp Shop's facilities for the fabrication of special apparatus with "Pyrex" Ball and Socket Joints are also available.

Corning is not prepared to furnish clamps for Ball and Socket Joints. The joints, however, are made to accommodate clamps of conventional design.

For full information on new "Pyrex" Ball and Socket Joints, consult your regular laboratory supply dealer.

#### NEW CATALOG SUPPLEMENT No. 4

If you have not received your Supplement No. 4 to Corning's Laboratory Glassware Catalog LP21, send for it today. It describes numerous new items in both "Pyrex" Laboratory Glassware including "Pyrex" Fritted Ware. Please use coupon below.

CORNING GLASS WORKS • CORNING, N. Y.

Laboratory and Pharmaceutical Division (Dept. 54-32)

Please send Supplement No. 4 (to Corning's Laboratory Glassware Catalog LP21)

Name..... Please print

Position.....

Company or Institution.....

Address.....

"PYREX" and "VYCOR" are registered trade-marks and indicate manufacture by  
CORNING GLASS WORKS • CORNING, N. Y.



When inquiring specify CP7979 — see information request blank, pgs. 2-3



## INSTRUMENTS

strument with a number of strokes on the rubber bulb and turned bottom side up and back again. This causes absorbing fluid to mix with the gas sample and pick up all the  $\text{CO}_2$  in the gas. Absorption of the  $\text{CO}_2$  creates a suction which draws the absorbing fluid up into the graduated tube in an amount equal to the  $\text{CO}_2$  absorbed. The level of the fluid column shows the percentage of  $\text{CO}_2$  which can be read directly from the  $\text{CO}_2$  scale at the right side of the center tube. A fire efficiency finder is especially designed for use with the analyzer. When the  $\text{CO}_2$  percentage in the flue gas has been determined with the analyzer, the pointer on the calculator is moved to the corresponding figure on the scale. Then, the slide is moved until the figure obtained by testing the stack shows in the upper right hand corner of the calculator. The performance of the furnace then appears in another slot. The calculator instantly converts reading of the analyzer into terms that show the degree of furnace efficiency. Literature on request.

BACHARACH INDUSTRIAL INSTRUMENT CO.,  
Dept. CP, 7600 Bennett St., Pittsburgh, Pa.

When inquiring specify CP7980 — see information request blank, pgs. 2-3

### Multiple Unit Electrically Heated Combustion Furnace

*Modifiable to handle organic combustions in temperature limit of 540 C.*

**Uses** — Although originally designed specifically for the determination of carbon on cracking catalysts used for production of high octane aviation gasoline, the equipment is modifiable to handle a wide variety of organic combustions within the temperature limit of 540 degrees C (1000 F).

**Description** — Briefly the equipment comprises: — (1) Oxygen purification system for combustion gases. (2) Oxygen pressure regulating column, (3) Electrically heated furnace twenty-four inches long with four combustion tubes of one inch diameter by thirty inches long. Heating intensity for each half of each tube is independently controlled, and temperature of any tube can be readily observed by means of an indicating pyrometer. (4) Conventional absorption trains with calcium chloride for absorption of moisture and Ascarite for removal of carbon dioxide. The assembly illustrated is merely representative of other multiple assemblies, which can be built up to suit the job involved. (Manufactured and distributed by Precision Scientific Co. through co-operation of Universal Oil Products Co.)

PRECISION SCIENTIFIC CO., Dept. CP, 1750 N. Springfield Ave., Chicago, Ill.

When inquiring specify CP7981 — see information request blank, pgs. 2-3

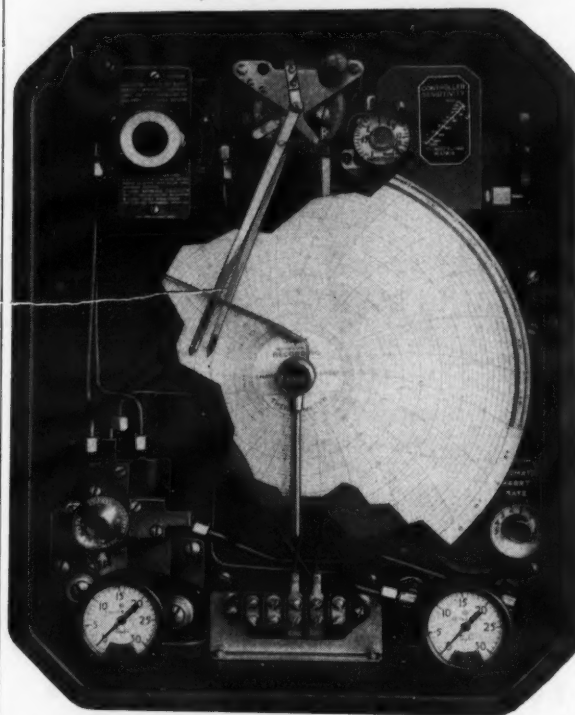


TYPICAL FURNACE ASSEMBLY . . . all are built to requirements

NOVEMBER - DECEMBER, 1943



BACK THE ATTACK  
WITH EXTRA  
WAR BONDS!



*Here is the new Taylor Automatic-Manual Control Unit No. 41S339 installed in a Fulscope Recording Controller. A similar unit (No. 41S338) is available without the "test" position.*

*Instruments for indicating, recording, and controlling temperature, pressure, humidity, flow, and liquid level.*

**W**E take considerable pride in this Taylor Automatic-Manual Control Unit, the announcement of which has been delayed while filling a large backlog of urgent, high-priority orders. Thoroughly field tested, in fact it "cut its teeth" on one of the toughest processes in the making of synthetic rubber, this new Taylor development can be easily installed in any Taylor Fulscope single duty Controller already in the field to make it even more versatile than ever before.

Installed completely within the instrument—a most important advantage—it enables you to change from automatic to manual operation or vice versa, without disturbing the process under control. This is particularly advantageous on continuous processes employing fractionating columns, polymerizers, heat exchangers, etc., where a disturbance at one point might be passed on to succeeding operations. It also makes possible any required readjustments or repairs of instrument under operating conditions.

In addition to the three usual positions, Automatic, Manual, and Service, it has a fourth step, the "Test" position—an exclusive Taylor feature. This feature allows instrument to be adjusted and synchronized under operating conditions while process is still being controlled manually, permitting instrument to be "cut in" without up-setting process control. Ask your Taylor Field Engineer! Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada.



**Taylor Instruments**

— MEAN —

**ACCURACY FIRST**

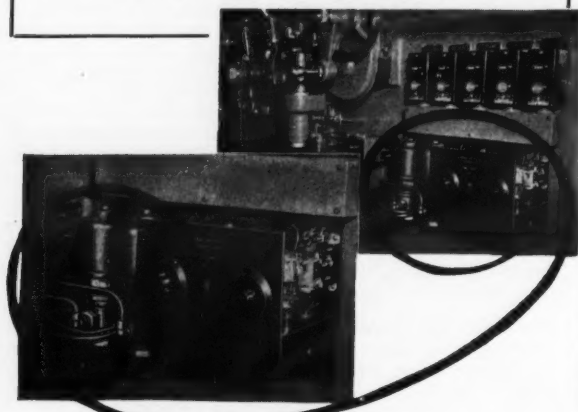
IN HOME AND INDUSTRY

— When inquiring specify CP7982 . . . see information request blank, pgs. 2-3 —

# ASCO

## SOLENOID VALVES

... assure efficient  
Flow Control or  
Safety Cutoff  
of Liquids and Gases



Safety Shutoff  
and Trip Valves,  
(Manually Reset)

Shutoff Valves  
(packless type)

Shutoff Valves  
(packed type)

Adjustable Flow and  
By-Pass Valves

Two-Way,  
Three-Way and  
Four-Way Valves

Pilot Control Valves

Explosion-Proof  
Valves

Special Valves

There are innumerable places in process plants where an efficient Solenoid Valve will control the handling of liquids and gases better than any other device. Of the many types of ASCO Solenoid Valves, there is one that should take care of your problem perfectly.

Depending upon the type, sizes range from 1/8th inch up to 12 inches (pipe connections). Standard types are built for pressures up to 400 pounds and for temperatures up to 600° F. Specially lined valves for handling chemicals and explosion-proof solenoids are available. The above describes briefly the ASCO Line of Solenoid Valves. Circular 146 will give more details and Catalog 147 will give complete technical data. Back of these valves are 55 years of experience gained by specializing in this work. Why not bring your control problems to us?

We also manufacture a complete line of Electrically Operated, Magnetically Held and Mechanically Held Transfer Switches and Remote Control Switches; also Relays, Contactors and Panels.

## Automatic Switch Co.

47 EAST 11th STREET, NEW YORK, N. Y.

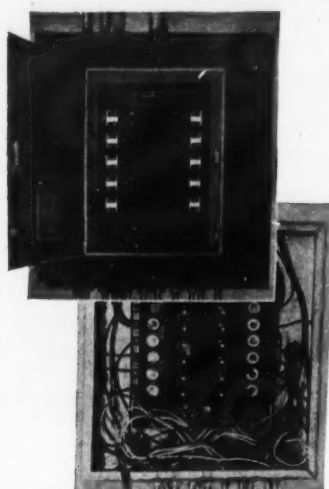
TELL US WHAT YOU WISH TO ACCOMPLISH

When inquiring specify CP7983 — see information request blank, pgs. 2-3

## INSTRUMENTS

### Multi-Breaker Convertible Panel

Converts obsolete fusible panel boards to circuits greatly increasing capacity



PANEL BOARD CONVERTED TO circuit breaker increasing number of circuits

time, these installations reduce the heating which accompanies overloading and wastes power. By employing thin wall wire the existing conduct may be wholly or

Uses — Provides for the complete conversion of obsolete fusible panelboards to circuit breakers with considerable increase in the number of circuits, as well as in the circuits and mains capacities.

Features — Average increased capacity between 50 and 100%. Some cases reported as much as 400% increase. Besides utilizing the installed box and conduct thus reducing the use of critical materials, labor costs and change-over

### In this COMBINATION

Potentiometric  
MEASUREMENT

plus

"Electronic Principle"  
CONTROL



### You will have the ultimate in TEMPERATURE CONTROL

The Wheelco Potentio-trol (potentiometer controller) is designed for applications requiring utmost measuring accuracy and control sensitivity. All lag time between temperature deviation and complete control is eliminated. The Potentio-trol may be had with Chronotrol (Program Control), Proportioning Control or a combination of both. Scale ranges from -300°F. to +3600°F., or equivalent °C. Write for Bulletin A-2.

## Wheelco Instruments Co.

841 W. HARRISON STREET . . . CHICAGO 7, ILLINOIS

Originator of "Electronic Principle" Temperature Controls

When inquiring specify CP7984 — see information request blank, pgs. 2-3

BECKMAN pH INSTRUMENTS

ARE THE ONLY MODERN pH

INSTRUMENTS THAT PROVIDE

THESE THREE VITAL ADVANCEMENTS



1. High Temperature Glass Electrodes for continuous pH measurement in hot process solutions up to 212°F. (100°C.)!



2. High pH Glass Electrodes that can be used in highly alkaline process solutions, even in the presence of sodium ions.



3. Unusually rugged, thick-walled glass electrodes that withstand abrasion under the most difficult conditions where grit-laden fluids or rough service conditions are a problem. Withstand 100 lbs. pressure.

If you are considering the installation of any pH equipment—whether large-scale automatic equipment or manual equipment for portable plant and field use—find out the many important advancements Beckman instruments provide. Beckman Instruments Division, National Technical Laboratories, South Pasadena, California.

Send for booklet "What Every Executive Should Know About pH!"

## Beckman

THE LEADING NAME IN pH

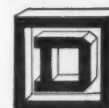
When inquiring specify CP7985 — see information request blank, pgs. 2-3



HERE'S A STARTER  
YOU CAN REALLY  
GET AT! . . .

Complete accessibility of Square D electric motor starters means faster, easier inspection and servicing. Their simple construction enables the electrician to exchange magnet coils, contacts or overload relays in practically no time at all—using only a screwdriver.

WRITE FOR CATALOG BULLETIN 8536 which describes Square D's complete line of A. C. magnetic starters



ELECTRICAL EQUIPMENT • KOLLSMAN AIRCRAFT INSTRUMENTS

## SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

When inquiring specify CP7986 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



partially used.

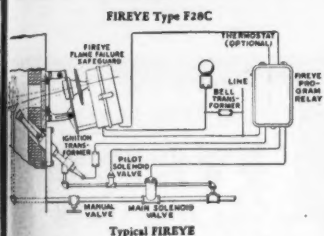
**Description** — The conversion is comparatively simple. The old rim and interior are removed from the box and the existing wiring pulled out if it cannot be utilized. Complete details on request.

SQUARE D CO., Dept. CP, 6060 Rivard St., Detroit, Mich.

When inquiring specify CP7987 — see information request blank, pgs. 2-3

## Flame Failure Cut-Off Operates From Direct Observation Of Flame

Photoelectric system for oil, gas, pulverized coal burners — for automatic and manually ignited burners



Typical FIREYE Installation For Automatically Ignited Oil Burner

FLAME CUT-OFF for manually ignited burners (top)-below cut-off for automatic burner

the burner is automatically fired, program relay type (Number R-25) programs fuel pump and valve operation, intermittent ignition system, purging period and recycling. This safeguard instrument is designed to operate at high ambient temperatures. The type designed for manually operated burners (Number F28C) is mounted directly on the furnace wall and watches the flame through a window in the wall of the fire chamber. Once the lens of the optical system has been aligned, the field of vision of the electric eye is limited to the flame itself and extraneous light is rejected. Light from the flame strikes the sensitive plate of the photocell and starts a flow of electrons, producing a minute electrical current. After passing through a vacuum tube the current is amplified sufficiently to operate a relay which directly controls a solenoid valve governing fuel feed — or with program relay previously mentioned which programs the entire cycle of burner operation. Complete information regarding the Fireeye Photoelectric Flame Safeguard on request.

COMBUSTION CONTROL CORP. (affiliate Photoswitch, Inc.) Dept. CP, 77 Broadway, Cambridge, 42, Mass.

When inquiring specify CP7988 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

## METALLURGICAL PRODUCTS ANALYZED SPEEDILY AND ACCURATELY

### Slomin High Speed Electrolytic Analyzers

The rapid acceptance of this instrument for metallurgical analysis is outstanding endorsement of its proven ability and consistent reliability. Over 800 Slomin Analyzers are now in use in metallurgical laboratories.

Electrode design, current efficiency and improved procedures reduce deposition time formerly required by other systems as much as 25 to 40%. Under these high speed conditions hard, smooth, bright and closely grained deposits that firmly adhere to the electrodes are produced, thus assuring good reproducibility of results. Users report an accuracy of 0.01 to 0.04% for routine determinations.

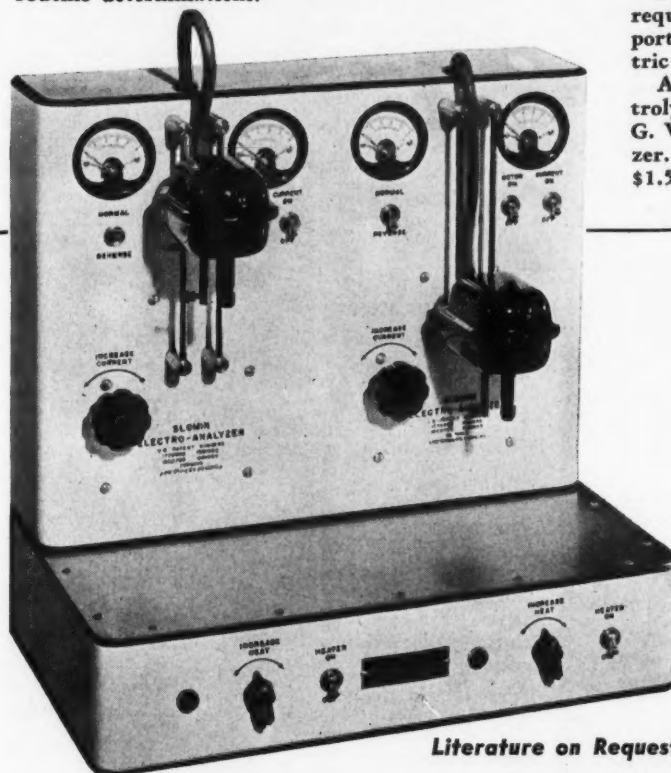
Each model is portable and enclosed in a welded steel case finished in acid resistant baked white enamel. The brushless motor is vapor tight and is therefore unaffected by corrosive fumes.

Both models have an electrically heated, rheostat controlled beaker platform for adjusting solution temperatures, and voltmeters and ammeters so that detailed studies can be made.

Each position of the two place analyzer is a complete circuit that operates independently of the other. Consequently this unit can be used for the simultaneous determination of two samples having widely divergent characteristics.

No accessory generators or rheostats are required—all models are self-contained, portable and operate from standard electric circuits.

A laboratory manual of high speed electrolytic methods of analysis written by G. W. Slomin is supplied with each analyzer. Individual copies are available at \$1.50 each.



Literature on Request

- S-29460 Slomin Electrolytic Analyzer, One position, 5 Ampere Model, with Heating Plate. For operation from 115 volt, 60 cycle circuits. Each \$170.00
- S-29462 Ditto. But for operation from 230 volts, 60 cycle circuits. Each \$175.00
- S-29465 Slomin Electrolytic Analyzer, Two positions, 5 Ampere Model, with Heating Plate. For operation from 115 volt, 60 cycle circuits. Each \$310.00
- S-29467 Ditto. But for operation from 230 volts, 60 cycle circuits. Each \$320.00

### High Speed Electrodes for Use with Slomin Electrolytic Analyzers

- S-29632 Corrugated Platinum Anode (Pat. pending). Price subject to market.
- S-29672 Corrugated Platinum Cathode (Pat. pending). Price subject to market.

E. H. SARGENT & CO., 155-165 E. Superior St., Chicago 11, Ill.  
Michigan Division: 1959 East Jefferson, Detroit 7, Michigan

S A R G E N T  
SCIENTIFIC LABORATORY SUPPLIES

When inquiring specify CP7989 . . . see information request blank, pgs. 2-3

# Another Paragon Timer achievement!

Here's a notable development in automatic electric timers . . . which includes several distinct engineering and operating improvements.

## ENGINEERING FEATURES

- 1 The setting knob is directly connected thru the switch operating cam; unit does NOT set thru a clutch; this provides positive switch action.
- 2 All energy required to operate switch itself is built up by manually setting pointer. Motor and clutch thereby relieved of all drag.
- 3 Switch—single pole, double throw, 1000 watt capacity, fully enclosed. Underwriter's approved.
- 4 Only 2 exposed gears—motor pinion and wheel. Precision hobbled.
- 5 Motor—self starting, slow speed, industrial type synchronous, completely sealed.
- 6 No energy is required of clock motor to trip switch at end of preset time.
- 7 Nine time ranges from 0 to 14 1/4 seconds through 0 to 9 1/4 hours. Available in all types of enclosures.
- 8 All parts rust proofed and protected against corrosion.

## NUMEROUS APPLICATIONS

Adaptable to any manually preset application with automatic switch operation at end of time cycle, such as plastic molding, rubber curing, batch mixing, heat treating, enamel baking, liquid agitation, light exposure—photographic, therapeutic, blue printing, infra-red drying, blower operation, pump operation, conveyor operation and food processing.

**PRECISION BUILT:** This and every other Paragon unit is precision built, simple, accurate, reliable, modern and reasonably priced. Made by an organization of designers and engineers, growing since 1905.

**SEND FOR BULLETIN . . .** containing complete construction and installation data.

**PARAGON ELECTRIC COMPANY**  
33 W. VAN BUREN ST. • CHICAGO 5, ILL.

# Paragon Chicago

BUILDERS OF ELECTRICAL EQUIPMENT SINCE 1905

When Inquiring specify CP7890 — see information request blank, pgs. 2-3

Page 24

## INSTRUMENTS

### Level Gauge Uses Principle of Force Change Due to Buoyancy

Equipment consists of transmitter with booster pilot valve and a receiver which may be indicating, controlling or recording

**Uses** — This liquid level gauge operating on the pneumatic "null" balance principle may be indicating, recording or controlling for installation at a distant point. As transmitter may be furnished with floats over 60 ft. long installation may be made on pressure tanks or on large tanks of sperial construction. Transmitters are also available mounted in float chambers for control of liquid level.

**Features** — Advantageously applied on hazardous or corrosive fluids due to packless construction and the ability confine any leakage of hazardous fluids inside the safety pressure housing containing the balance mechanism.

**Operation** — The transmitter operates on the principle of force change due to buoyancy of the liquid rather than a float following a changing level. A stainless steel disc carrying the float arm is mounted on the outlet of the tee. The tubular float is suspended from one end of the float arm and the balance bellows is connected to the other end. A small change of buoyant force on the float is balanced immediately by a change of air pressure in the bellows. This is the pressure transmitted to the receiving meter. Due to the pneumatic "null" balance principle employed, all members are maintained in equilibrium. The change in

### MEMO: Get in touch with DAVIS on Automatic Valve Specialties

PRESSURE REGULATORS  
BALANCED VALVES  
BACK PRESSURE VALVES  
FLOAT VALVES  
PUMP GOVERNORS  
CUSHIONED CHECK VALVES  
DAMPER REGULATOR  
STEAM TRAP  
MOTOR OPERATED VALVES  
CONDENSATE TRAP  
RELIEF VALVES  
LOW WATER FUEL CUT OUT UNIT  
EXHAUST RELIEF VALVES  
BUTTERFLY VALVE  
LIQUID LEVEL CONTROLLERS  
STRAINERS  
STOP AND CHECK VALVES  
TURBINE BLEEDER NON RETURN VALVES  
COMBINED PRESSURE AND VACUUM RELIEF VALVE

**MEN IN INDUSTRY:** If you have problems in Pressure, or Flow control of steam, air, gas or Liquid, you may save time and money by contacting Davis.

Davis offers what is believed to be the broadest line of automatic valve specialties in existence, providing an answer to almost every conceivable requirement.

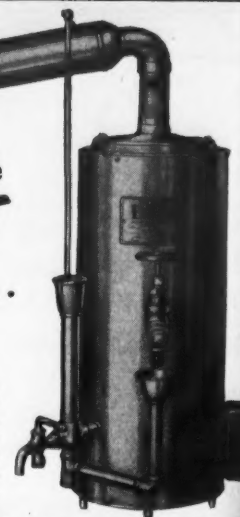
Do you have Davis literature on file? We'll be glad to send it.

## DAVIS REGULATOR COMPANY

2562 SOUTH WASHTENAW AVE., CHICAGO, ILLINOIS

When Inquiring specify CP7991 — see information request blank, pgs. 2-3

If you need  
distilled water use the  
**PUREST**  
It costs no more . . .



With Barnstead Water Stills, there's one thing you can be sure of . . . you get the purest distilled water at the lowest possible cost. And this holds for all Barnstead Water Stills . . . from the smallest 1/2 gallon per hour laboratory model right up to the largest 500 gallon per hour industrial type unit.

Also, with the wide range of sizes available, it is always possible to eliminate waste distillation by getting a Barnstead Still that exactly meets your quantity as well as your quality needs. Operation by gas, steam or electricity.

## Barnstead

STILL & STERILIZER CO. Inc.

66 LANESVILLE TERRACE, BOSTON, MASS.

When Inquiring specify CP7992 — see information request blank, pgs. 2-3

ARE YOU WASTING  
Precious Fuel  
Up the Stack?

THE **PORTABLE**  
**FYRITE**  
CO<sub>2</sub> ANALYZER  
EXPOSES STACK LOSS  
**INSTANTLY!**



Getting all the heat possible from your fuel? Be sure—use the FYRITE "Orsat" CO<sub>2</sub> Analyzer. It makes accurate flue gas tests easy—instantly exposing percentage of fuel wasted. The FYRITE is simple, rugged, color weather proof—has no valves, clamps or leveling bottle; no glass parts or batteries. More than 8000 FYRITE are in service.

**OXYGEN ANALYZER** designed on same principle available soon. Write for particulars.

RETURN THIS COUPON FOR BULLETIN 380 on FYRITE "Orsat". Also learn how to get immediate delivery under priority regulations

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

**\$18.50 COMPLETE**  
WITH INDUSTRIAL  
TYPE FLUE FILTER

## BACHARACH

Industrial Instrument Co.  
7000 BENNETT ST.  
PITTSBURGH, PA.

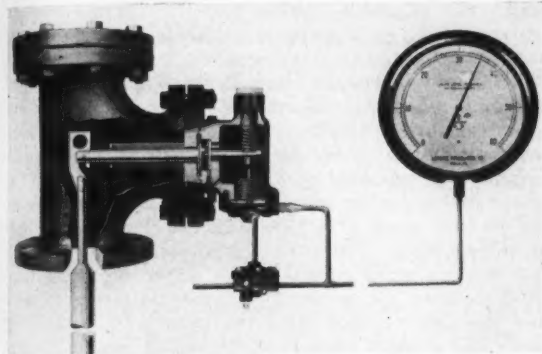
When Inquiring specify CP7993 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## INSTRUMENTS

the balance position on the bellows between zero and full scale is less than .001 in., thereby eliminating all nozzle and bellows non-linear characteristics, as well as metal fatigue resulting from motion. This guarantees an accurate transmitted pressure, which is always linear with the change of level. Suitable stops are provided to keep any motion of the disc well within its elastic limit. Thrust pivots are provided for overload pressures. Stainless steel packless disc will distort but not rupture on pressures up to 5000 pounds. Fast operation is obtained due to high capacity of the booster pilot valve. Errors due to transmission line leaks are minimized. With a transmission line of 300 in. of 1/4 in. OD copper tubing instrument pointer will move from zero to full scale in 3 to 4 seconds. Transmitters for use on sub-zero temperatures have a balancing mechanism removed from the frosting zone and



LEVEL GAUGE . . for indicating, controlling, recording

are compensated for ambient temperature changes.

**Description** — Construction is suitable for working pressures up to 300 psi. Catalog describing this and related equipment on request.

MOORE PRODUCTS CO., Dept. CP, H & Lycoming Sts., Philadelphia, 24, Pa.

When inquiring specify CP7994 — see information request blank, pgs. 2-3

## Circular Slide-Wire Rheostat

*Three terminals permit unit to be used as potentiometer or voltage divider*

**Uses** — Designed especially for low resistance, low wattage requirements, this rheostat-potentiometer is suitable for a number of applications in the instrument field.

**Description** — A length of resistance wire is stretched tightly around the outside of a cylindrical core which is bonded to a ceramic base. The wire is firmly anchored to two terminals. Contact to the wire is made by a phosphor bronze spring arm which is connected to a third terminal. The provision of three terminals allows the unit to be used as a potentiometer or voltage divider. The maximum resistance which can be supplied on this unit is approximately 1 ohm while the minimum total resistance can be made approximately 0.1 ohm. Since the contact arm travels along the wire from end to end, the resistance variation is stepless. Shafts for knob control or screw driver control can be supplied. These units are made to order to suit the particular application. Complete information on request.

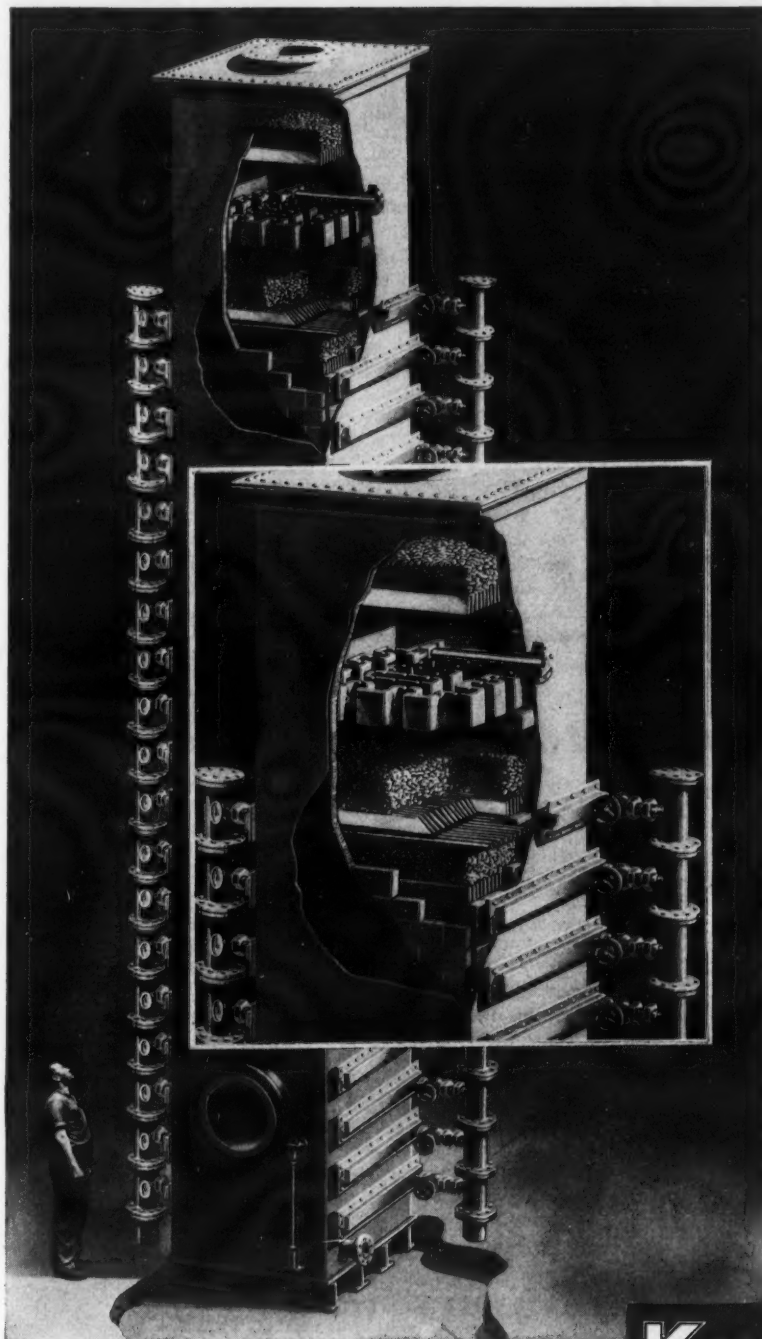
OHMITE MFG. CO., Dept. CP, 4835 W. Flournoy St., Chicago, 44, Ill.

When inquiring specify CP7995 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

# PYROFLEX Functional Units

## provide the strength of steel and the corrosion resistance of ceramics



The above Pyroflex Functional Unit is a muriatic acid absorption tower 6' by 5' by 33' high designed to have a capacity of 4,200,000 BTU per hour to produce 360 tons of 31% acid per day from 22% HCL gas.

**DEVELOPED** over 10 years ago, Pyroflex Functional Units provide corrosion-proof equipment beyond the size and service limits of chemical stoneware. A variety of tailor-made units, designed to do specific jobs, have provided the first satisfactory solution for many tough problems.

In essence, Pyroflex Functional Units combine the structural strength of steel or concrete with the positive corrosion resistance of ceramics, carbon or glass. Pyroflex itself is a thermoplastic sheet lining resin which acts as a bonding agent, an expansion cushion and a corrosion seal at the same time. We sell Pyroflex not by the sheet or pound but by the lining installed or the complete vessel.

## Installations

Among various types of Pyroflex equipment in service are the following: wood pulp chlorinator towers, electrolytic refining tanks, steel mill pickling tanks, electrolytic plating tanks, muriatic acid system coke boxes and gas cooling towers, acid boiling kettles, acid absorption and rectification columns, acid fume washers, acid storage and reaction tanks, floors, sewers, troughs and neutralizing collection basins.

## Engineering

Knight engineers' wide experience in solving corrosion problems and developing acid-proof equipment for chemical manufacturing enables our organization to render you a real service on your own special problem if you will give us complete details.

**MAURICE A. KNIGHT**

411 Kelly Ave.  
Akron 9, Ohio

**KNIGHT-WARE**  
CHEMICAL EQUIPMENT

When inquiring specify CP7996 . . . see information request blank, pgs. 2-3



# WHICH FLOOR REPAIR SHALL I BUY?

★ You want a floor repair that is permanent and load-proof. It must be installed easily and quickly without work stoppage. And, it must be a reasonably priced, tried and proved product. But, which floor repair shall you buy?

We believe ready-mixed, spark-proof **SPEED PATCH** is the answer. It is durable and load-proof, and feather-edges perfectly. Expert repairs can be made quickly with heavy trucks sailing over the patch without delay. And, while Speed Patch costs no more than ordinary patching materials, it has consistently out-performed all others.

**SPEED PATCH** stands out prominently as the nation's favorite in leading war plants. Orders and repeat orders from every industry offer convincing proof that Speed Patch is the answer to your problem.

Order today for immediate shipment!

Representatives in Principal Cities

ROCK-TRED Corporation

605 W. Washington St., Chicago



## SPEED PATCH

When inquiring specify CP7997 — see information request blank, pgs. 2-3



# New Materials

## Synthetic Fabricated To Rubber Tolerances on Regular Equipment

*Compound for manufacturing or finished products;  
sheets, molded articles, or tubing available*

**Uses** — This synthetic rubber product is available for manufacture on outside equipment or will be supplied in sheets, molded article or tubing.

**Features** — Gas resistant, water repellent, will not support flame. Resistant to acids and alkalis. Self-sealing under heat pressure.

**Description** — Can be fabricated to all standard rubber tolerances on regular rubber equipment. Will stand temperature — softening point 240 degrees F., melts 330 degrees F., each grade of hardness is resistant to 40-60 degrees below zero. It has double the abrasive strength of natural rubber and tensile strength is 2500 pounds per square inch. A sheet of .012 thickness has a compression strength of 140 pounds. Resistant to uric acid, 30 percent sulphuric acid and ozone. Impact strength good. Specific gravity 1.26. Flexural strength good, electric properties fair, including dielectric strength. Elongation 3.2. It shows no deterioration under atmospheric conditions, nor will aging deteriorate. Available in black, white, gray, translucent, red, brown, green. In clear form it cannot be made hard. Under allocation by WPB and is allowed

for War and medicinal uses where properties other than rubber are necessary. Known as "Texrub."

M. B. PRICE & ASSOCIATES, Empire State Bldg., New York, N. Y.

When inquiring specify CP7999 — see information request blank, pgs. 2-3

## Adhesive Firmly Joins Asbestos Board to Form Air Ducts

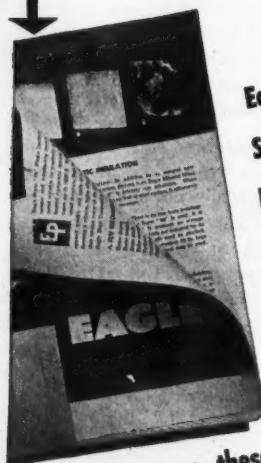
*Applied with air or caulking gun to give strong,  
fireproof smooth joints*

**Uses** — For fabricating non-metallic air ducts as well as in construction of closets, lockers, boxes.

**Features** — Gives a uniform and smooth joint. Ducts quickly constructed to requirements.

**Description** — Asbestos Cement Board, Transite, Masonite and similar materials suitable for use in forming ducts with this adhesive, which is strong and quick drying. Not waterproof as this is not essential in its prescribed applications. Recommended procedure is to cut boards into required sizes and apply adhesive tape so that different pieces will be held about 3/16 inch apart, leaving a groove between each piece. These taped pieces are then turned over and into this groove the adhesive is applied. Compressed air or caulking gun is used. The pieces are then formed into the required shape and the cement line smoothed down with a fine wet brush to give a good joint. The end

## All the evidence you want!



Eagle High Temperature  
Super "66" Plastic  
Insulation can prevent  
crucial fuel losses...  
save substantially on  
installation costs! And  
it is rust inhibitive!

What's more, these FREE Data Sheets  
prove it... send for them!

**Yes! These Data-Packed Specification Pages** will give you the full story of a unique and outstanding insulating material — Eagle Super "66" Plastic Insulation — which is suitable for practically any heated equipment operated at temperatures up to 1800° F.

**Springy, resilient balls** of Eagle High Temperature Mineral Wool — honey-combed with thousands of "dead air" cells to provide exceptionally high heat saving efficiency — are the basic ingredients.

**Maximum dry coverage** is provided because Eagle Super "66" has unusually low volumetric shrinkage. Count on an average wet coverage of 61 square feet one inch thick per 100 lbs., and a dry coverage from 50 to 55 square feet.

**100% reclaimable** when used at temperatures up to 1200° F., Eagle Super "66" may be removed from equipment, remixed with water, reused.

**Protects against rust** — when properly applied to iron or steel surfaces, Eagle Super "66" helps increase resistance to rust and corrosion.

*May we send you these timely data sheets? A post card will bring them!*

**THE EAGLE-PICHER  
LEAD COMPANY** Cincinnati, O.



Eagle-Picher High Temperature Insulating Materials also include Eagle Insulating Blankets, Eagle Supertemp Blocks, Eagle Loose Wool, Eagle Insulcoat, Eagle Insul-tic, Eagle Finishing Cements.



**\*DIBUTYL PHTHALATE**  
for binding smokeless powder, for softeners for synthetic rubber, for plasticizing cellulose esters and others.

**\*RESINS FOR ADHESIVES**  
to replace and extend more critical rubber, latex and vinyl resins (used in shoe adhesives, adhesives for sealing containers for vitamins, food containers, etc., for Army, Navy and overseas shipments).

**\*RESINS AND SOLVENTS**  
for waterproof and flameproof impregnations for cotton duck, used for jeep tops, tents, tarpaulins, etc.

**\*SOLVENTS (TOLLAC-NEVSOL)**  
for replacing toluol, which is so essential to TNT production.

**\*GUANIDINE NITRATE**  
an ammunition component.

**\*CREOSOTE OIL**  
for wood-preserving... tise for railroads, piles for new ship bases.

**\*NEVILLAC RESINS**  
for grease-proof and water-proof paper for packaging aircraft parts, rifles, Army rations (outside wrappers), machine parts, and other war equipment.

**\*WIRE ENAMEL THINNERS**  
for magnetic wires — for radio transmission, etc.

**\*RESINS FOR ANTI-FOULING**  
shipbottom paint for Navy Ships.

**\*RESINS AND THINNERS**  
for protective coatings for all types of war goods.

**\*RUBBER-COMPOUNDING OILS AND RESINS**  
for war-essential rubber manufacture.

**\*ICE PREVENTATIVE OIL**  
for treatment of aeroplane rubber spines, caps to minimize ice accumulation.

**THE NEVILLE COMPANY**  
PITTSBURGH - PA.

When inquiring specify CP8000 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## MATERIALS

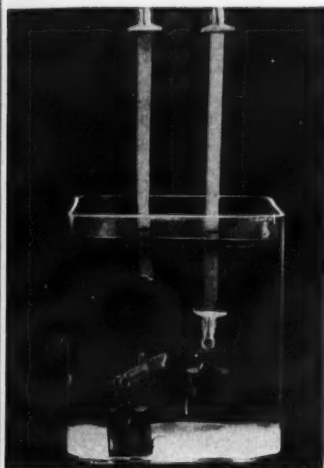
of each section are fastened together by a piece of board 3 in or 4 in. wide cemented over the joints with the same adhesive. The work should be performed in a room of even temperature and twelve hours allowed for the cement to set. Asbestos paper cemented to the joints may be used in place of the adhesive tape to hold joints until cement sets but must be handled more carefully as the adhesive tape dries almost immediately while the paper requires a longer interval to set up. Bends, curves can be constructed in the same manner as outlined. The adhesive should be stored at 60-70 degrees but if subject to freezing temperature can be restored by placing in warm room for a few hours and then stirring. A gallon fabricates about 40 lineal feet. Shipped in one gallon, five gallon and fifty-five gallon drums. Named Atlas Adhesive Number 1770.

ATLAS SUPPLY CO., Dept. CP, Manayunk, (Philadelphia) Pa.

When inquiring specify CP8001 — see information request blank, pgs. 2-3

## Wet Strength Papers Demonstrate Superiority In Practical Tests

Advanced methods, new resinous compounds lead to successive improvements in processes



**SUBMERSION TEST** . . . quickly breaks untreated paper—shows no great effect on wet strength type

chemicals which bond paper making fibers together making them resistant to separation when wet.

**Description** — Treatment said to be applicable to numerous papers and can be varied to obtain the degree of wet strength believed to be most desirable for the case in question to provide dependable performance in water absorption, water resistant or water repellent service. The practical value of this paper's features is illustrated in its use with asphalt water-proofed papers. The makers point out that the asphalt film is usually in the middle of the sheet and only protects against water transmission. The use of a wet strength treatment provides a valuable margin of protection against breakdown that might result from excess moisture and strain. The accompanying illustration shows the qualities of wet strength papers. The strip of wet strength paper at right was still unbroken after prolonged submersion in water. Strip of paper at left broke after three minutes in water. (Photo courtesy American Cyanamid Chemical Corp.)

CENTRAL PAPER CO., Dept. CP, Muskegon, Mich.

When inquiring specify CP8002 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

**Uses** — For a wide range of services in which paper usage where damp air, water or moisture containing products are involved. Papers produced by the method described here in addition to those for general use include filtering paper, asphalt combining or combined papers and many others.

**Features** — These papers are produced by recently developed methods of applying new chemicals

# NEW PRODUCT REPORT

## HB-40

A Clear, Mobile High-Boiling Hydrocarbon

### INTERESTING CHARACTERISTICS:

HB-40 should find many uses due to its unique combination of chemical and physical properties. It is a high-boiling, stable hydrocarbon oil, with unusual spread between freezing point and boiling point.

### SUGGESTED USES:

1. As a hydraulic fluid in thermal controls.
2. As a plasticizer for vinyl, polystyrene, methacrylate resins and for asphalt or gilsonite base paints.
3. As a textile lubricant and softener, in particular for rayon and woolen goods.
4. As a constituent of leather dressings, particularly those formulations used for softening leathers.
5. As a solvent for various types of oils, resins and waxes.
6. As a solvent for industrial processing. (Such as extraction of organic materials from waste liquors.)
7. As an absorber to remove volatile organic compounds from gases. (Such as removal of naphthalene from by-product gas.)
8. As a solvent where low volatility and low flammability are essential or desirable.

### PHYSICAL PROPERTIES:

**Appearance:** Almost colorless, mobile, oily liquid, with faint pleasant odor.

**Color:** Less than 500 APHA (Darkens on exposure to sunlight).

**Specific Gravity:**  $1.005 \pm 0.010$  @ 25/15.6°C. — (8.37 pounds/gallon, average).

**Refractive Index:** 1.5540 — 1.5740 @ 25°C.

**Coefficient of Expansion:** 0.000741 cc/cc/°C.

**Carbon Residue:** (Conradson) 0.02%.

**Ash:** (10-gram sample) Nil.

**Neutralization Number:** 0.03.

**Steam Emulsion Value:** 45.

**Stability to Heat:** Appears to be relatively stable at the boiling point (at least in glass), and does not readily oxidize. However, it does decompose at 300°C. under pressure, in iron.

**Stability to Acids and Alkalies:** Appears to be relatively stable, and undergoes no significant changes in composition when kept in contact with boiling 10% aqueous solutions of  $H_2SO_4$  or NaOH at atmospheric pressure.

Vapor Pressure °C.	MmHg
150	2
165	4
175	6
190	10
205	16
225	28
245	50
250	71
300	235 (est)
325	410 (est)
357	760

Distillation Range:	Start	Deg. C.
	10%	345 (corr.)*
	50%	353 "
	90%	359 "
	95%	420 "

\*Corrected for stem exposure

**Flash Point:** 345°F. ASTM D92-24.

**Flame Point:** 385°F. ASTM D92-24.

**Pour Point:** Minus 28°C.

**Solubility:** Not soluble in water, but is miscible in all proportions at room temperature with a number of solvents and oils.

**Compatibility:** Compatible in varying proportions with polystyrene, ethyl cellulose and methacrylate resins.

**Viscosity** — SUS. 136.5 @ 100°F.  
38.4 @ 210°F.

### ELECTRICAL PROPERTIES: (Typical Data)

**Dielectric Constant:** 2.53 at 25°C. 2.35 at 100°C.

**Dielectric Strength:** 30 kv., average, at 25°C.

**Resistivity:**  $5000 \times 10^9$  ohms/cm<sup>2</sup> at 100°C.

Above  $17,000 \times 10^9$  ohms/cm<sup>2</sup> at 25°C.

**Power Factor:** 0.12% at 100°C. at 1,000 cycles.

For experimental samples of this interesting new product, write MONSANTO CHEMICAL COMPANY, Phosphate Division, St. Louis 4, Missouri.

## MONSANTO CHEMICALS

SERVING INDUSTRY...WHICH SERVES MANKIND



"E" FOR EXCELLENCE—The Army-Navy "E" burgee with two stars, "representing recognition by the Army and the Navy of especially meritorious production of war materials" over a two-year period, flies over Monsanto's executive offices in St. Louis and over Monsanto plants at Anniston, Ala., and Monsanto, Tenn. The Army-Navy Production Award also has been won by five Monsanto plants at St. Louis, Mo., Monsanto, Ill., Karnack, Texas, and Springfield, Mass.

When inquiring specify CP8003 . . . see information request blank, pgs. 2-3

# CEMENT FLOORS CLEANED AND BLEACHED WITH AKTIV

another  
**LABOR- SAVING  
PLANT MAINTENANCE  
PRODUCT**

developed by  
**TURCO**  
PRODUCTS, INC.

makers of specialized industrial  
chemical compounds

## WHEREVER SAFETY AND SANITATION ARE VITAL CONSIDERATIONS...

**TURCO AKTIV** applied to unpainted cement FLOORS, HALLS, STEPS, AREA-WAYS, solves an important maintenance problem.

It quickly emulsifies and dissolves grease and grime, and **BLEACHES AS IT CLEANS**, leaving all unpainted cement areas white and sanitary.

**SAFE TO USE:** No caustics, no acids, no fire hazard. Turco Aktiv is so chemically mild that it will not harm hands or clothing.



MAIL THE COUPON FOR FULL INFORMATION HOW TO USE TURCO AKTIV

### TURCO PRODUCTS, INC.

6135 So. Central Ave., Los Angeles 1, Calif.

Send information on **TURCO AKTIV** cement maintenance.

Name \_\_\_\_\_ Title \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_

Warehouse Stocks & Technical Service men in all key cities.

When inquiring specify CP8004 — see information request blank, pgs. 2-3

## MATERIALS

### Ready-Mixed Concrete Floor Patch

Floors may be used in six or seven hours after repair has been made

**Uses** — Primarily for filling cracks, breaks in concrete and cement floors.

**Features** — Floor can be used in six or seven hours after application. Ready-mixed, requires only addition of water.

**Description** — Composed of same pure emery that comprises maker's aggregate for resurfacing and topping floors, using only the smaller particles. These are mixed with quick-setting binder. Available in small, economical packages. Known as "Emeri-Crete."

WALTER MAGUIRE CO., INC., Dept. CP, 330 W. 42nd St., New York, 18, N. Y.

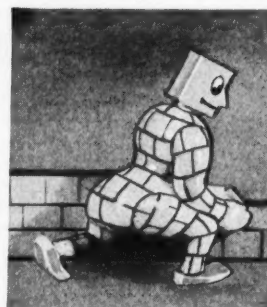
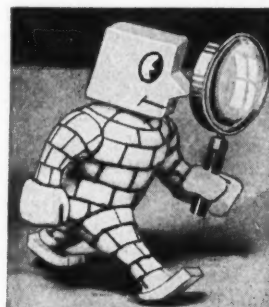
When inquiring specify CP8005 — see information request blank, pgs. 2-3

### Selection and Use of Industrial Greases to Meet Specific Operating Requirements

Booklet — entitled, "What Makes A Grease" discusses the standards by which a good grease should be judged. It points out the various factors which should influence the proper grease for a specific job. It describes the characteristics of this refiner's greases and various greases developed especially to meet numerous requirements. These include adhesive pressure grease, gun grease, pressure system grease, roller bearing grease. The practical general discussion as well as the variety of practical, detailed information makes this book of interest to engineers, production men and others interested in lubrication. Available upon request.

SUN OIL CO., Dept. CP, 1601 Walnut St., Philadelphia, 3, Pa.

When inquiring specify CP8006 — see information request blank, pgs. 2-3



## CARE of LININGS IS IMPORTANT!

Inspection Service Maintenance and Repair . . .

If your linings are operating under abnormal conditions or beyond the guaranteed life period, a sure way to avoid costly delays and spoilage of solutions is to take advantage of the quick and thorough inspection service which **STEBBINS** provides.

Lining life can be extended far beyond normal life by proper maintenance and prompt repair of minor damage. **STEBBINS** service is geared to reduce costly "time out."

Consult **STEBBINS** today for quick and efficient lining maintenance.

**Stebbins Engineering and Manufacturing Company**  
WATERTOWN, NEW YORK

When inquiring specify CP8007 — see information request blank, pgs. 2-3



Presenting  
the 9th Edition of  
"the answer to  
**INDUSTRIAL  
DERMATITIS**"

Bigger in Size!  
Broader in Scope!

## more precious than a FIRST EDITION

This Manual of Prevention and Protection provides proof of **PLY** leadership in the field of industrial skin diseases. Organized for ready reference with a complete list of hazards by industries, with proven control technique. Write for your copy today. No cost or obligation.

### THE MILBURN COMPANY

3246 E. Woodbridge • Detroit 7, Michigan



Pioneers of Skin Protection in Industry

When inquiring specify CP8008 — see information request blank, pgs. 2-3

## YOUR LABELS STAY ON!

with

# GRIP-TIGHT LABEL PASTE

### SERVES ALL INDUSTRIES

Chemicals  
Oils & Greases  
Canned Foods  
Metal Products

### HOLDS TO

Tin cans, iron drums,  
pails, bottles, metal  
parts, over painted, lac-  
quered surfaces and other  
materials.

Tell us your labeling  
problem.

New resin emulsion paste holds paper labels to hundreds of surfaces, finishes, and materials.

Easily applied by brush. . . Holds permanently. . . No discoloration. . . Adheres neatly and tightly. . . Economical.

Write for Technical Bulletin, complete price schedule, or Order a Trial Shipment Today.

### PAISLEY PRODUCTS, INC.

1770 Canalport, Chicago 16, Ill.  
630 W. 51st St., New York 19, N. Y.

### TRIAL OFFER

Quart . . . . . \$1.00  
Gallon . . . . . \$2.75  
Plus Postage



**PAISLEY**

**JOB  
TESTED**

PASTES GLUES CEMENT

When inquiring specify CP8009 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## MATERIALS

### Ramming Mixture Permits Rapid Completion of Furnace Bottoms

*Hearth complete to finished contours before heat is applied; mixture installed without addition of slag, high magnesia content not diluted*

**Uses** — Ramming mixture for new bottoms of open hearth and electric furnaces and for maintenance of existing bottoms. Also serves successfully as monolithic inner lining in non-ferrous metallurgical furnaces where the requirements are for a highly basic refractory.

**Features** — Permits the installation of a complete hearth to its finished contours before heat is applied, allowing steel to be made in a few days effecting savings in both labor and time. Introduced without the addition of slag so its high magnesia content is not diluted. Rapidly installed with common labor.

**Description** — This product (H-W Magnamix) is a ramming mixture of Washington magnesite. It contains approximately eighty percent of magnesia, largely in the form of the mineral periclase, the durable constituent of magnesite furnace bottoms. When properly rammed this mixture has a cold crushing strength of 1500 pounds per square inch, a modulus rupture of 350 pounds per square inch and a density of 165 to 170 pounds per cubic foot. Contains about 130 pounds of periclase per cubic foot. Six page illustrated bulletin gives complete details including directions for installation of open hearth bottoms.

HARBISON WALKER REFRACTORIES CO., Dept. CP, Farmers Bank Bldg., Pittsburgh, Pa.

When inquiring specify CP8010 — see information request blank, pgs. 2-3

### Liquid Protective Coating For Workers Exposed To Solvents

*Easily applied; dries to visible "glove"*



EASY APPLICATION . . . lasts a day

**Uses** — A protective coating for the skin designed to prevent infections from cutting oils, many chemicals, solvents, fumes, etc. used in many mechanical, chemical processing plastic and food industries.

**Features** — Liquid form. Resists penetration. Promotes healing. One application is said to last a full work period.

**Description** — Quick and economical in application, drying rapidly to an

elastic visible coating. Washes off with soap and water leaving skin soft and clean. Packaged in 2, 8, 16 oz. bottles. Known as "Neo-Film." Full details on request.

JONES MEDICAL LABORATORIES, INC., Dept. CP, 800 Huron Rd., Cleveland, Ohio.

When inquiring specify CP8011 — see information request blank, pgs. 2-3

 **Wyandotte**  
CHEMICALS CORPORATION

... One of the world's great  
producers of basic chemicals

CAUSTIC SODA • CALCIUM CHLORIDE  
SODA ASH • CHLORINE • DRY ICE  
BICARBONATE OF SODA • CALCIUM CARBONATE  
AROMATIC INTERMEDIATES • HYDROGEN

MICHIGAN ALKALI DIVISION • Wyandotte, Michigan

When inquiring specify CP8012 . . . see information request blank, pgs. 2-3

# X-PANDO PIPE JOINT COMPOUND ACTUALLY STRENGTHENS THE JOINT

Used by U. S. Army, U.S. Navy, U. S. Army Air Corps, U. S. Maritime Commission



Here's a pipe joint compound that **EXPANDS** as it **SETS**—correcting imperfections in faulty threads and flanged faces — strengthening every joint — preventing leaks permanently. Better than litharge and glycerine for all uses. X-Pando (the one formula) holds anything carried in metal pipe except certain heavy acids. Economical. Remember, one formula for all uses! Expands and contracts with pipe movement. Resists vibration, deflection, sharp temperature changes, pressures. Withstands deflection — joints sealed with X-PANDO may be easily taken apart. Standard pipe compound in American industry and in the Shipbuilding field.

**DISTRIBUTORS EVERYWHERE**

## X-PANDO CORPORATION

43-15 36th Street - Long Island City, N. Y. - Stillwell 4-7180

When inquiring specify CP8013 — see information request blank, pgs. 2-3



Porous Carbon Diffuser



Pipe, Fittings, Bubble Caps and Trays



Tube and shell heat exchange unit



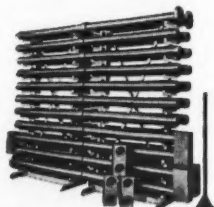
Headers for heat exchanger



Sections of segmental type reaction tower



47' high all-carbon electrostatic precipitator



Return bend cooling coil

When inquiring specify CP8015 . . . see information request blank, pgs. 2-3

## MATERIALS

### Paste for Adhering Paper Labels to All Surfaces and Materials

*Wide applications on containers; for hand brushing or table gluing machines*

**Uses** — Especially designed to provide all purpose application in applying labels to containers made of a wide variety of materials; tin, fibre, glass etc.

**Description** — Resin emulsion adhesive. Weight eight and three quarter pounds per gallon. Reaction — slightly alkaline. Non-injurious to skin, clothing and brushes. Non-toxic, non-corrosive, non-staining. In appearance it is a soft, white, buttery paste. Applied as received or reduced with water. Moderate drying speed allowing the labeling operator sufficient time to lay out several labels at a time. When the adhesive film dries it produces a permanent crystallizing bond between the paper and the surface that withstands humidity changes, extremes of temperature, handling and abuse during shipment. Recommended for hand brushing but can be applied by many types of table model gluing machines. Diluted with clean water mixed in thoroughly in required proportions. Usual mixture is 1 pint water to 1 quart paste. Maximum dilution is equal parts of water and paste. In order to make specific recommendations the manufacturers of this paste will accept samples of labels, containers, or materials together with details of the problem involved without obligation on the part of those making inquiry. Bulletin 4 on request.

PAISLEY PRODUCTS CO., Dept. CP, 1770 Canalport Ave., Chicago, Ill.

When inquiring specify CP8014 — see information request blank, pgs. 2-3

### For Continuous and Reliable Service

#### NATIONAL AND KARBATE CARBON AND GRAPHITE PRODUCTS

are extremely versatile and readily adapted to the construction of equipment of conventional design as well as special equipment of new design.

Outstanding performance and economies, along with simplification of design, are made possible by the following unique and advantageous combination of physical and chemical properties offered by these materials.

Resistance to severe thermal shock / No deformation at high temperatures / Not wet by molten metals — no sticking / Mechanical strength maintained at high temperatures / No reaction with most acids, alkalis and solvents — no contamination / High rate of heat transfer (graphite and graphite base "Karbate" products) / Low rate of heat transfer (carbon and carbon base "Karbate" products) / Low thermal expansion / Good electrical conductivity / Self-lubricating / Available in impervious grades / Available in highly permeable (porous carbon and graphite) grades / Easily machined and fabricated.

Practically any design can be machined or fabricated from available stock in the form of beams, blocks, slabs, brick, plates, round and rectangular rods, tubes and cylinders, pipe, fittings, valves, tower sections and tower accessories. Special shapes or forms can be molded or extruded when quantity justifies.

The illustrations show only a few of the many diversified applications of these products.

Write for descriptive literature



#### NATIONAL CARBON COMPANY, INC.

Unit of Union Carbide and Carbon Corporation

CARBON PRODUCTS DIVISION, CLEVELAND, OHIO

General Offices: 30 East 42nd St. New York, N. Y.

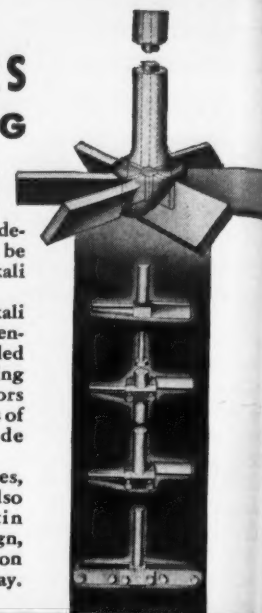
Branch Sales Offices: New York Pittsburgh Chicago St. Louis San Francisco

## AGITATORS of HAVEG

The four standard types of HAVEG agitators illustrated are typical of an almost infinite variety of designs and types which can be molded from acid or alkali resistant HAVEG plastic.

HAVEG is acid or alkali resistant throughout its entire mass. It may be molded to shape without involving expensive molds. Agitators are just one of many types of chemical equipment made of Haveg.

Tanks, towers, pipe, valves, fittings, fume duct are also made of HAVEG. Bulletin F-3 gives complete design, engineering and application data. Send for a copy today.



H8-43

### HAVEG CORPORATION

NEWARK, DELAWARE

FACTORY - MARSHALLTON, DELAWARE



CLEVELAND 110 Leader Building CHICAGO 1201 Palmer Building DETROIT 2872 E. Grand Blvd. LOS ANGELES 601 W. 10th St.

When inquiring specify CP8016 — see information request blank, pgs. 2-3

## WOULD YOU DUMP DOLLARS INTO A HOLE?



**SAVE THE TERRIFIC COST OF FLOOR HOLES**

**Patch with "QUICK-FLOOR"**

**SMOOTH!**

**PERMANENT! LOW COST!**

Holes cause spills . . . and accidents that cannot be measured in dollars . . . Trucks and Merchandise are damaged . . . and lots of dollars lost thereby.

Compare this to the cost of restoring to worn floors that smooth even traffic surface as when new with "Quick-Floor." This costs about 1c per square foot . . . average . . . in place . . . and is permanent.

It's easy to use — just place . . . it's ready for traffic fast as packed . . . No delay . . . No interference. Place when using and use when placing. Many of the country's top concerns use "Quick-Floor" for years. Experienced engineering advice on request.

### DURA-TRED COMPANY

355 N. CENTRAL PARK BLVD. • CHICAGO 24

Smoothing the Way for Industry's Floor Traffic

When inquiring specify CP8017 — see information request blank, pgs. 2-3



## MATERIALS

### Rubberless Building Wire Saves Tin and Other Critical Materials

*Synthetic tape and moisture proof kraft paper replace familiar insulation*

**Uses** — Type EG (Emergency Grounded) is approved for use as the neutral grounded conductor in AC circuits and as the "white" conductor in cable assemblies such as non-metallic and armored cable, twin-lead encased, etc. where WPB rubber restriction order prohibits the use of rubber insulation on the white or grounded neutral conductor. Type E. I. (Emergency Insulated) is approved for single conductor in open wiring as a wartime alternate for rubber insulated wire, as the "hot" wire is non-metallic sheathed cable than is run exposed in dry locations.

**Features** — Insulations and protective coatings contain no critical materials. (except the copper conductor)

**Description** — The copper conductor is insulated with a synthetic (cellulose acetate butyrate) tape and further protected with a heavy layer of moisture proof compacted Kraft paper. As no rubber insulation is involved the conventional tin coating is no longer necessary thus saving this scarce material. The full NEC wall is protected by a flame and moisture resistant fibrous covering made to the well known Dilec specifications, the finished wire being approved by the Underwriter's Inc. The wire known as "Hazpak" is available in all regular building wire sizes for 600 volt ratings and can be supplied in all standard colors with full surface identification markings and footage measurements. Since the overall diameters are the same as for rubber covered wire (type R) when calculating conduit sizes, basic diameters are the same. Literature on request. HAZARD INSULATED WIRE WORKS (Div. Okonite Co.) Dept. CP, Wilkes Barre, Pa.

When inquiring specify CP8018 — see information request blank, pgs. 2-3

### Colored Identification Coatings For Tracer Wire Applications

*Expedite winding of electrical equipment; available in various colors, easily applied, dry quickly*



**Uses** — To expedite winding of electrical equipment.

**Features** — Dries rapidly permitting handling without delay almost immediately after application.

**Description** — These "Identifiers" comprise a group of colored coatings for traced wire applications. Applied by running the wire through the varnish or by dipping the entire coil of wire in it. Smooth finish and exceedingly fast drying. These coatings can be supplied in any color. Complete information on request.

STERLING VARNISH CO., Dept. CP, Haysville, (Pittsburgh) Pa.

When inquiring specify CP8019 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

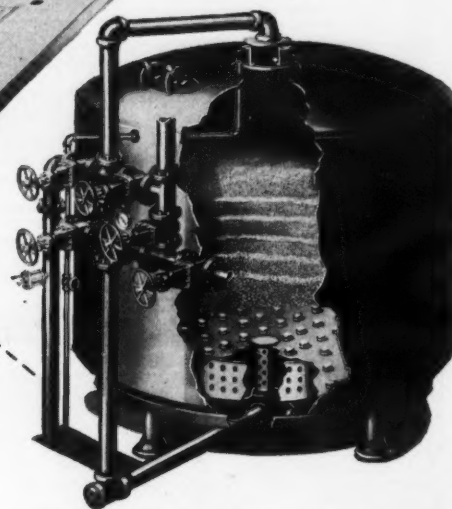


**DESIGN**  
for post-war  
progress

**A**SIDE from winning the war, laying plans to meet the demands of a peacetime world is one of industry's most important activities today.

Here at Graver we are working closely with the management and engineering staffs of many of America's leading industries. Our big job is to supply essential equipment to those producing munitions of war, and we're working at it night and day. But our drawing boards also reveal plans for water conditioning equipment of all types to meet the requirements of peacetime. This equipment will not be built until Victory is won. Yet the planning will be completed. And when the last shot has been fired, there need be no delay in getting into production.

It's none too early to start planning, and our engineers will gladly cooperate with you. This service does not obligate you in any way and it may save you valuable time when the day arrives for rapid conversion to peacetime production.



Graver Water Filters, either vertical or horizontal, can be built in any capacity to meet your requirements. Prominent among the many features is the under-drain collecting and distributing system which insures uniform pressure over the entire area, resulting in equal collection from, and uniform distribution to, the entire filter bed.

You are cordially invited to visit our Booth No. 422 at the 19th Exposition of Chemical Industries, Madison Square Gardens, Dec. 6th to 11th.

**GRAVER**

**WATER  
CONDITIONING  
EQUIPMENT**

**GRAVER TANK & MFG. CO., INC.**

4809-55 Tod Ave., East Chicago, Ind.  
NEW YORK CATASAUQUA, PA. CHICAGO TULSA

Graver designs, builds and installs all types of water conditioning equipment including:

Water Filters • Oil Removal Filters • Iron Removal Filters  
Hot Process Water Softeners • Zeolite Water Softeners  
Taste and Odor Removal Filters • Reactivators

V-46W

When inquiring specify CP8020 . . . see information request blank, pgs. 2-3

NEVILLE

## NEVILLAC RESINS

Hard Nevillac · Soft Nevillac · LX-483 Nevillac · Nevillac 10

REG. U. S. PAT. OFF.

These phenol-coumarone-indene resins, (the last two listed are viscous liquids) because of their unusual compatibility and plasticizing properties, are being widely used in the manufacture of:

### ADHESIVES

Waterproof  
Optical  
Shoe  
Food Packaging  
Pressure sensitive

### PAPER COATINGS

Ordinance wrap  
Waterproof  
Greaseproof  
Army Rations  
(outside)

### MISCELLANEOUS

Laminating Varnishes Leather Finishes Paints and Varnishes  
Artificial Leather Army Raincoats Printing and duplicating inks

NEVILLAC RESINS are soluble in alcohol, hydrocarbons, ketones, esters, ethers and chlorinated hydrocarbons. They are compatible with most synthetic resins including cellulose esters and ethers, vinyl acetate, vinyl butyral and sevin (corn protein) and partly with vinyl acetate and chloride copolymer.

They are not under allocation but require AA priority ratings to effect shipment. Write us for further information and samples.

## THE NEVILLE COMPANY

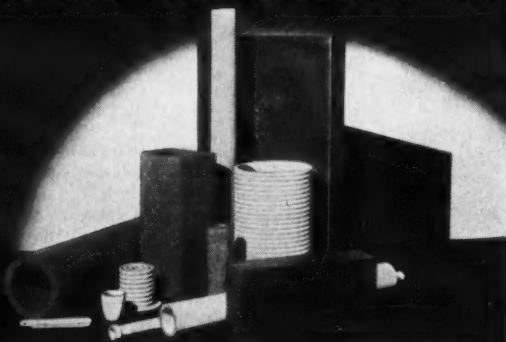
PITTSBURGH · PA.

Chemicals for the Nation's War Program

BENZOL • TOLUOL • XYLOL • TOLUOL SUBSTITUTES • CRUDE COAL-TAR SOLVENTS  
HI-FLASH SOLVENTS • COUMARONE-INDENE RESINS • TERPENE RESINS • TAR PAINTS  
RUBBER COMPOUNDING MATERIALS • WIRE ENAMEL THINNERS • DIBUTYL PHTHALATE  
RECLAIMING, PLASTICIZING, NEUTRAL, CREOSOTE, AND SHINGLE STAIN OILS

When inquiring specify CP8021 — see information request blank, pgs. 2-3

## For the Process Industries:



For the process industries Norton Company offers a line of special refractories including ALUNDUM (Al<sub>2</sub>O<sub>3</sub>) and CRYSTOLON (SiC) bricks and plates for furnaces and ovens making calcium carbide, hydrochloric acid or water gas; ALUNDUM burner blocks; cores, tubes and muffles for electric furnaces; electrolytic diaphragms; catalytic supports; highly refractory cements; and a wide variety of porous mediums.

R-857

NORTON COMPANY

Worcester 6, Mass.

## Norton Refractories

When inquiring specify CP8023 — see information request blank, pgs. 2-3

## MATERIALS

### Preservatives for Pharmaceuticals

Designed to combine high efficiency in low concentration with extreme solubility in water

**Uses** — Preservative for pharmaceutical and cosmetic products. Waveset lotions, cosmetic creams, toothpaste, ointments, powders, elixiers, syrups, fluid extracts, jellies.

**Features** — Said to be odorless, tasteless, colorless, non-toxic and non-irritating to skin in quantities employed.

**Description** — The first of these two preservatives is water soluble (CHEMOSOL). For preservation in aqueous solutions or materials containing water because of its solubility at every concentration. The second, (CHEMOGIN) in oily or fatty preparations. Mixture — (CHEMOSOL — CHEMOGIN) in all emulsions. Quantities required: 0.05 — 0.03% for aqueous materials based on the weight of the finished product. 0.05 — 0.1% for alcoholic preparations. 0.02 — 0.3% varying with the fat or oil contents of the cream. (High oil contents require a higher concentration of the preservative.

CHEMO PURO MFG. CORP., Dept. CP, 48th Ave., 5th St., Long Island City, 1, N. Y.

When inquiring specify CP8023 — see information request blank, pgs. 2-3

### Thermoplastic Coating Protects Against Acid, Caustic Corrosion

As lining for storage tanks, protects equipment, sprayed or brushed; made of inert synthetic resins

**Uses** — Thermoplastic coating for application on metal, concrete and wood, particularly in such applications as



## Weld it OR THREAD IT! SARAN PIPING

### Resistant

#### TO MOST CHEMICALS

Because of its outstanding properties, Saran Pipe is destined to play a prominent role in the laboratory.

Chief among these properties is its resistance to most acids and alkalis, its resistance to heat up to 175°, its toughness, durability, yet light weight.

Saran\* is easily handled, being joined by a quick welding process or by threading.

Even if you have a low priority, get the whole story now, in preparation for use when available. Write us for the Saran\* Pipe Booklet.

Acadia Synthetic Products Division  
WESTERN FELT WORKS  
Chicago, Ill.: 4035-4117 Ogden Ave.  
Detroit, Mich.: 420 Stephenson Bldg.  
Branch Offices in All Principal Cities

\* Licensee of The Dow Chemical Company

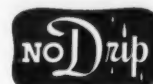


Processors of Synthetic Rubber and Plastics • Sheets • Extrusions • Molded Parts

When inquiring specify CP8024 — see information request blank, pgs. 2-3

## STOP THAT DRIP

NO MORE DAMAGE FROM CONDENSATION OR SWEATING PIPES, TANKS, WALLS, CEILINGS AND AIR DUCTS



### A SURE CURE

• This sensational plastic cork coating prevents condensation drip from metal, concrete, brick, wood, plaster or composition surfaces. Permanently protects metal against rust and corrosion, thus prolonging life of pipes, tanks, etc. Forms a moisture-proof, insulation type coating impervious to acid and alkali.

Stucco-like finish requires no maintenance. A gallon covers about 30 feet of 1/2" pipe. Dries in 24 hours. Comes in 1, 5 and 55 gallon drums.

Immediate Shipment. Order from your Supply House.

FREE NoDrip Circular about Condensation Drip and its Prevention.



J. W. MORTELL CO.  
Technical Coatings Since 1895  
530 BURCH ST., KANKAKEE, ILL.

When inquiring specify CP8025 — see information request blank, pgs. 2-3



## ONE LESS "CHORE"

when you use G-T PACKINGS

... because PALMETTO and all of the other G-T Packings stay soft... last longer... reduce the frequency of repacking. G-T Packings assure these results because each individual strand is saturated with a special lubricant before the strands are braided, plaited or twisted. Moreover, each of the different G-T Packings (see list below) has a special lubricant... developed for its particular service... and compounded in our own plant. Write for Literature.

GREENE, TWEED & COMPANY  
Bronx Blvd. at 238th St., New York 66, N. Y.



PALMETTO for steam, hot water, air. PALCO for water. PELRO for oil. CUTNO for alkalis. SUPERCUTNO for acids. KLEPO for foods, etc. PALMETTO SUPERSHEAT PACKINGS

9 out of 10 who try them, buy them.

When inquiring specify CP8026 — see information request blank, pgs. 2-3



## MATERIALS

lining for storage tanks and other equipment to protect foods from contamination by corrosion caused by dilute acids or caustics; for superstructures, for protecting machinery and equipment in chemical, bottling, brewery and dairy plants, from corrosion caused by acids.

**Description** — May be applied in any number of coats required for the particular condition or use. Coating (Amercoat Number 33) is combination of the most inert synthetic resins obtainable and is the result of extensive development and test work in laboratory and field. Descriptive bulletin on request.

AMERICAN PIPE AND CONSTRUCTION CO., Dept. CP, Box 3428 Terminal Annex, Los Angeles, Cal.

When inquiring specify CP8027 — see information request blank, pgs. 2-3

### Anhydrous Hydrofluoric Acid — Oil Refining Chemical — and How to Handle It Safely

The safe handling of anhydrous hydrofluoric acid is given comprehensive treatment in a twenty-four page booklet — handy pocket size. The text embodies an address delivered before a group of refiners and the data is based partly on published and written works and the best technical facts available. The discovery and development for commercial use is briefly traced and the names and address of principal producers listed. Hazards and precautions are discussed. Properties are carefully dealt with as are materials for construction, shipping container requirements, storage vessels, transfer of acid, piping and related equipment. Detailed explanation of employee precautions and safety practices and first aid suggestions complete the material. A special insert gives brief but practical directions for treatment of hydrofluoric acid burns. The booklet is titled — "Touchdowns — Not Fumbles" and is available upon request.

PENNSYLVANIA SALT CO., Dept. CP, 1000 Widener Bldg., Philadelphia, 7, Pa.

When inquiring specify CP8028 — see information request blank, pgs. 2-3

### Diatomaceous Filter Aids, Their Processing and Application in Various Filtration Operations

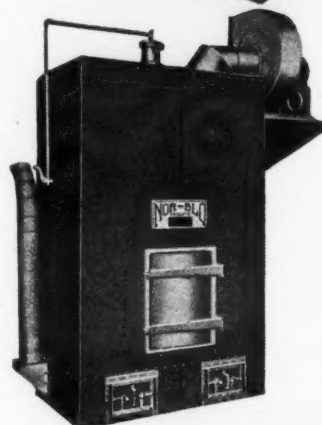
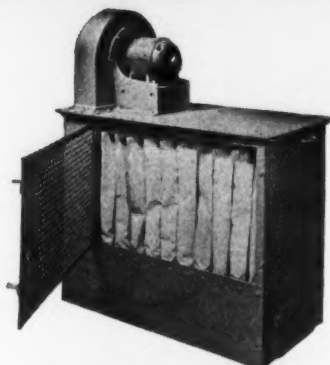
Origins, sources, various steps in processing and the numerous applications of diatomaceous products — particularly filter-aids are all given most interesting presentation in fourteen-page-and cover magazine style booklet. Numerous photos show two huge deposits described as unique in that "acicular" and "elongated" type diatoms predominate. The huge rotary kilns, air separating systems and various steps in precision control of production are also illustrated. The characteristics and action of these filter-aids of "acicular" and "elongated" type are discussed. A number of the most important applications of these (Dicalite) filter-aids are listed and include acids, chemicals, citric acid, cutting oils, dyestuffs, glue, soap, sugars etc. Diagrams picture details of typical filtration layouts and recommended procedure and sequence of filtration process is given. Precoating, feeding devices and amounts and grades of filter-aids to be used are also given practical discussion. Suggestions for numerous specific filtration applications such as beer, sugar refining, oil and fats, varnishes, water and metallurgical are clearly presented. The companies various products: filter-aids, mineral fillers and high temperature insulation, catalyst carriers, absorbents and many special materials are included in the listings. Bulletin Number B-10 sent on request.

THE DICALITE CO., Dept. CP, 520 N. Michigan Ave., Chicago, Ill.

When inquiring specify CP8029 — see information request blank, pgs. 2-3

NOVEMBER-DECEMBER, 1943

## Norblo High Efficiency Bag Type Dust Collection is now available in Portable Units for small scale chemical operations



Portable models occupy from 2' x 2' to 4' x 2' floor space. Cabinets are 3'4" high except two largest, which are 4'4" high. Semi-portable models are 9' high, over-all, and 5' deep. Width from 3' to 6'.

These new Norblo portable dust collecting units are designed for dry dusts, light dust loads and intermittent or light duty service. All are rated on the basis of 5000 feet per minute air velocity and 8 inches Static Pressure at the fan. This S.P. is necessary to comply with safety and health codes — and to permit really adequate dust collection by small units. Dust laden air enters the bags from the expansion chamber-hopper. Air flow is, therefore, upward against gravity. Dust is retained **inside** the bags and clean air is exhausted into the room. Bags are cleaned by hand shaking all at one time.

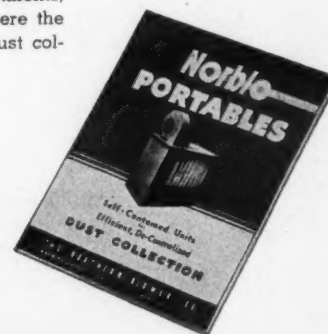
### FULLY PORTABLE MODELS

Capacities range from 300 c.f.m., 24 bags, ¾ H.P. motor, to 1350 c.f.m., 60 bags, 3 H.P. motor, and in price from \$222.00 to \$348.00 f.o.b. Cleveland.

### SEMI-PORTABLE MODELS

With larger bags than portable Norblos and three times the cloth area ratio to c.f.m. Norblo semi-portable model dust collectors have capacities from 1000 to 1500 c.f.m. Fan size and speed are determined by the dust problem and service required. These units can be equipped with automatic bag shaking mechanism using compressed air. Used in mixing and packaging departments, pilot plants and laboratories where the most efficient and economical dust collection is desired.

Send for complete catalog and price list of all bag type portable dust collectors by Norblo. Catalog gives detailed specifications necessary for selection and ordering.



# Norblo

## DUST COLLECTION

### THE NORTHERN BLOWER COMPANY

6409 BARBERTON AVENUE • CLEVELAND, OHIO

When inquiring specify CP8030 . . . see information request blank, pgs. 2-3

# NIAGARA

## AERO HEAT EXCHANGER

Increases production with better cooling . . .  
Saves space and equipment  
Cuts cost of water cooling

● A WATER SAVER, using the evaporative cooling principle to maintain ideal temperatures and hold them uniform by constant control. Successfully used in

- ... all water-jacketed equipment or engines
- ... quenching water, oils or compounds
- ... lubricants and coolants in machining
- ... air or gas compressors, jackets, inter and after cooler
- ... cooling electronic sets, welders, vacuum tubes, transformers, electric induction heaters

Saves piping, pumping and maintenance cost of large water systems; costs less to install; saves 95% of cooling water. Provides closed system free from contamination. Provides heating when needed. For Bulletin, address Department CE-113.

### NIAGARA BLOWER COMPANY

6 E. 45th Street, New York City  
District Engineers in Principal Cities

When inquiring specify CP8031 — see information request blank, pgs. 2-3

## SPEED YOUR PRODUCTION

### with <sup>TRADE</sup> YALE <sup>MARK</sup> CHAIN HOISTS



THERE is no better time than right now to look into the possibilities for increased production that Yale Chain Hoists can bring to your plant.

Yale Hoists give unhindered, long lasting service. They feature such safety factors as Steel Safety Hooks which, under extreme overload, open slowly—without fracture; self-actuated load brakes; special steel load chain and others.

Yale Hand Chain Hoists provide the world's finest insurance against "time out", due to handling accidents.

Let us tell you more about Yale Hoists—the Number One Choice for all lifting jobs.

Capacities: 300 lbs. to 40 tons.

THE YALE & TOWNE MFG. CO.  
4530 Tacony St., Philadelphia 24, Pa.

Please send without obligation a copy of your Hoisting Equipment Catalog.

Name \_\_\_\_\_

Address \_\_\_\_\_



When inquiring specify CP8032 — see information request blank, pgs. 2-3

# ★ IDEAS ★

Industrial ingenuity constantly hatches new ideas, many of which can be applied to similar problems in other plants. The Editors have selected these ideas and developments because of their interest and possible application in specific plant problems. If you would like more information on any of these, write direct to the manufacturers.

## Compressor Efficiency Increased By Complete Use of Auxiliaries

*Careful selection and installation of aftercoolers, air receivers, silencers, valves, drains emphasized*

The vital importance of auxiliaries in the production of overall maximum results in compressor plants is pointed out in a comprehensive bulletin and accompanying tables and charts recently issued by the Compressed Air Institute, Cleveland, Ohio. Air receivers, aftercoolers, gauges, thermometers, relief valves, drains and other accessories are discussed in detail. The bulletin points out that the air receiver forms an essential part of every compressor installation, absorbing pulsations in the discharge of the compressor, acting as a reservoir for the storage of compressed air, furnishing some reserve capacity to compensate for instantaneous demands in excess of the compressor capacity. It also acts as a condenser for some of the moisture present in the air or gas as it comes from the compressor and to collect such condensation that may pass the aftercooler, keeping the condensation from entering the distribution system.

The Institute endorses air receivers that meet ASME code. Sizes and capacities are shown in the table for dis-

charge pressures up to 125 pounds per square inch. Relief valves must not be set higher than for pressures stamped on the tank.

Aftercoolers, if not absolutely necessary, are advisable as a means of removing oil and water by means of condensation. Water in pipe line is objectionable for many reasons and is destructive to pneumatic equipment and tools. Aftercoolers installed near the compressor to condense the moisture before it has a chance to enter the line should be installed with an automatic trap to dispose of the condensations as it occurs. Aftercoolers are of the shell and tube type and should use the coldest water available. The importance of installing aftercoolers of proper design and capacity is indicated by the accompanying air-reaction chart (Fig. 1). Aftercoolers also are an important safety element. Fire which may originate from ignition of carbon on walls of discharge pipe will be quenched when it enters aftercooler.

It is the usual practice to run intake pipe to outside of the building and air filters to prevent dust and dirt from passing into compressor must be provided. Each manufacturer knows what size and type filter will give best service for the compressor used, with least pressure drop in lines. If possible suction filter should not cause drop of more than two inches of water. Air silencer should be used where

## BUCKETS

### for Every Service

There is a standard Link-Belt elevator bucket for every job. The line includes steel, malleable iron and Promal buckets of suitable size and type to meet any requirement. They are recognized as the standard for toughness — smooth, uniform construction and correct design . . . features that assure proper filling, free and clean discharge and long life.

Stocked at Link-Belt plants, warehouses and distributors. Send for copy of Standard Equipment Catalog No. 850.

9315

### LINK-BELT COMPANY

Engineers and Manufacturers of Materials  
Handling and Mechanical Power Transmission  
Machinery Since 1875.

Chicago-8, Indianapolis-6, Philadelphia-40,  
Atlanta, Dallas-1, Pittsburgh-19, Cleveland-13,

Detroit-4, San Francisco-24, Toronto-8.



When inquiring specify CP8033 — see information request blank, pgs. 2-3

## Make your own PHOTO-COPIES

RIGHT IN YOUR OWN OFFICE  
ERROR-PROOF • LOW COST

ACCURATE AS A MIRROR  
PHOTO-COPIES MADE FAST  
BY ANYONE — ANYTIME



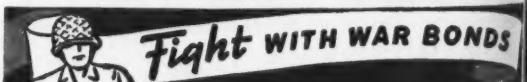
One or a hundred photo-exact copies in big time, of anything printed, drawn or photographed, when you own A-PE-CO. See how easily and quickly photo-copies are made with this modern, inexpensive, simple method. Let us show you, in your own office, how you can save. No obligation. Drop us a line — now!

A-PE-CO "Photo exact"  
PHOTO COPIER  
\$55.00

shop orders—anything written, printed, drawn, photographed. Accepted as legal evidence. Endless uses. Big savings. Used by industry, Government and engineers.

NO CAMERA — NO FILM — EASY TO USE  
Any employee quickly becomes expert. Use A-PE-CO on any desk or table. It's simple; fast. No moving parts. Saves other equipment. Conserves man-hours. Low cost per copy. Low investment. Get all the facts. See how you can save. Immediate delivery. Representatives in principal cities and Canada.

AMERICAN PHOTOCOPY EQUIPMENT COMPANY  
2849 N. CLARK ST. DEPT. DK-11 CHICAGO 14, ILLINOIS



When inquiring specify CP8034 — see information request blank, pgs. 2-3



## IDEAS

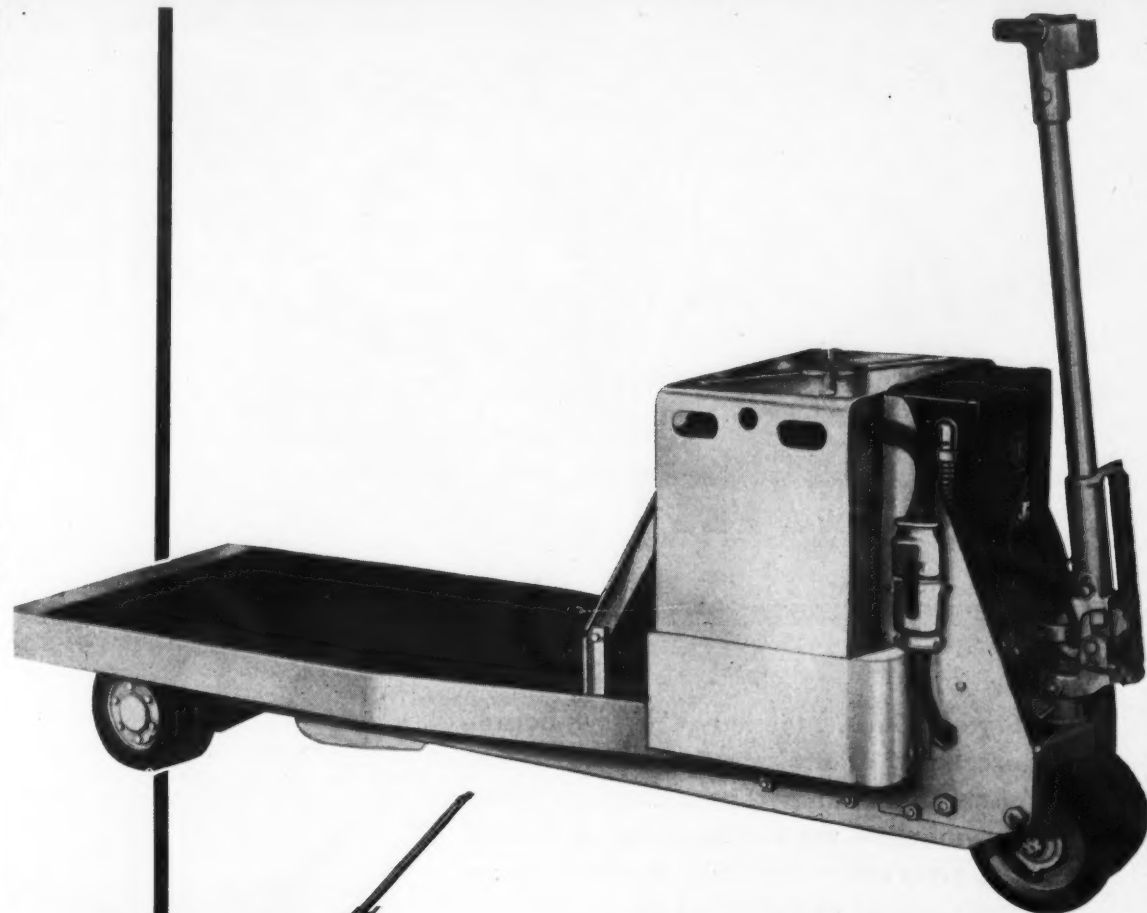
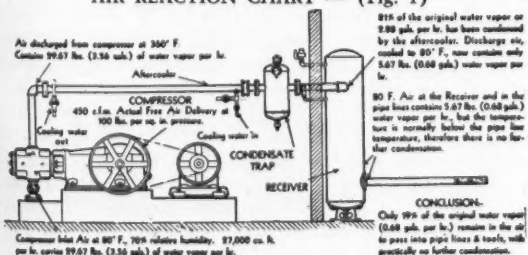
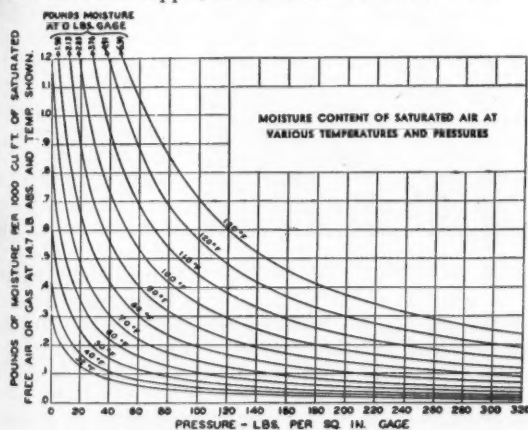
noise of suction is an objection. Discharge silencers are also frequently advisable. Protection devices that are important are a relief valve if a shut off valve is installed in the discharge line. The relief valve should be placed on the compressor side of the valve to protect the machine in case the operator starts the unit before opening the valve. Drains of ample size should be installed wherever needed. It is well to make these drains automatic. On large steam and gas engine driven equipment overspeed shut down is desirable. They are valuable where limiting speed governors might fail. Lube oil failure shut downs and jacket water failure shut downs are also desirable.

Diameter, Inches	Length, Feet	* Actual Compressor Capacity for which Receiver is Suited, Cu. Ft. Free Air Per Minute	Volume, Cu. Ft.	Types of Opening for Cleaning
14	4	60	4 1/2	Openings
18	6	95	11	for inspection
24	6	185	19	and cleaning
30	7	305	34	are required
36	8	450	57	and must meet
42	10	640	96	specifications of
48	12	1,275	151	A.S.M.E.
54	14	1,900	223	Code for Un-
60	14	3,000	275	fired Pressure
66	18	4,500	428	Vessels

\*For automatic start-and-stop service, extra large receivers are recommended to avoid starting too frequently.

All receivers up to 42 inches x 10 feet inclusive have screw openings — 48 inches x 12 feet and larger have flanged inlet and discharge openings. Vertical receivers must have base to raise them 6 inches above floor to permit hammer test by inspector.

Receivers are furnished complete with safety valves, pressure gauge, hand holes or manhole as required by Code, drain valve and nipple, and base for vertical receivers.



THE HYDROMATIC Fluid Ram — multi stroke lift — capacity 3500 to 8000 pounds.

THE RED ARROW Capacity to 5000 pounds — side lift improved hydraulic. Check.



Knowing how since 1910 naturally produces lift trucks superior in design and construction.

# No wonder They come back again and again for MORE—

This HydroLectric—original creation by STUEBING—with its efficient, rear load wheel drive, also includes America's finest products: Allen Bradley controllers, special, continuous duty, series shunt motor, New Departure and Timken Bearings, Fairfield heat treated matched gears, Square D switches, Goodyear and Firestone tires, finest alloy steels, oversize batteries, etc. Only the best America produces goes into the HydroLectrics. And yet, — it costs only 1/3 as much and weighs only 1/3 as much as other power trucks. And 9c per day for power is all its costs to operate. It is built to stand the gaff of overloading. Has records of 15 years of 8 hour day service — is fully covered by patents.

No other truck equals its performance, and its performance is better than we claim. That's why America's Greatest Industries demand MORE AND MORE!

**LIFT TRUCKS, INCORPORATED**  
**CINCINNATI, OHIO**

When inquiring specify CP8035 . . . see information request blank, pgs. 2-3

**WE  
ADD  
A STAR!**



Since 1906 . . . the Navy "E" symbolizes excellency of attainments and is awarded to ships and enlisted personnel. . . . Today it symbolizes the combined recognition of the Army and Navy and is given to organizations and personnel as an approval of their co-operative efforts in the manufacture of war matériel. The added star denotes continued approval and a perpetuation of this award.

We proudly acknowledge our having received these awards and sincerely appreciate this opportunity of again serving our country.



D.O. James precision made gears are important controlling factors in attaining the utmost fire power and efficiency of many different types of the guns used by our armed forces.

**D.O. James**

**ESTABLISHED 1888**  
Over 55 Years Making All Types  
of Gears and Gear Reducers

**D. O. JAMES MANUFACTURING CO.**  
1140 W. Monroe Street • Chicago, U. S. A.

When inquiring specify CP8036 . . . see information request blank, pgs. 2-3

## IDEAS

### Warning Signs Promote Safety On Industrial Truck Routes

*Constantly remind workers of increased care made necessary by increased materials handling*

The safe and efficient operation of various types of powered industrial trucks is an important factor in to-day's production requirements. Stepped-up schedules and greatly increased volume of materials handling have created a need for the most careful handling of all kinds of plant traffic. Safety signs offering quick, easily read warnings to both truck operators and industrial pedestrian employees are one of the greatest single helps to achieve better conditions. Numerous locations in practically every plant should be properly marked with such signs. Among the most frequently required signs are: "Caution — Low Head Room", "Slow — Narrow Aisle Ahead", "Slow — Blind — Corner", "Stop — Crossing." To further safer truck operation and increase efficiency, the Towmotor Corp. (1226 E. 152nd St.,) Cleveland, O. is offering such signs to safety directors of industrial plants. The size of the signs is fourteen by twenty-two inches for adequate visual display.

### Packless Flexible Fastener Prolongs Tubing Life

*Combines functions of supporting strap and vibration absorber for stationary movable tubing*



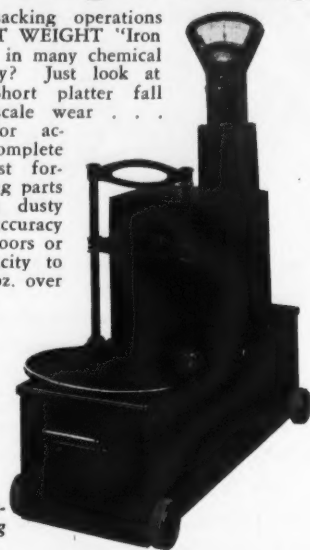
TUBE CUSHIONED BY CONE of fastener under impact

A new packless flexible fastener is another of the many new ideas developed originally for aircraft application that find almost immediate use in other industrial fields. The device combines the functions of a supporting strap and a vibration absorber for stationary or movable tubing. In addition to its use as a strap to eliminate the whip of hose in airplane engines its advantages are equally great with rigid piping. It consists of sensitive spring, cone spiraled and terminating in a clip which snaps onto the tube to be fastened. Size to fit the O.D. selected, of course. The fastener is affixed to the supporting surface by a screw fitted through the cone. The fastener flexes in all directions and can be installed in either lateral or vertical positions. With flexible hose it eliminates whip and counteracts "frequency." With copper tubing the fastener's free action in all directions aids in preventing crystallizing of the copper — induced by rigid strips which prevent expansion and contraction and concentrate stresses near the couplings. Upon any impact the fastener compresses into its cone, cushioning tube against injury. The fastener also offers sufficient play to make alignment of tubing easy. The device was originated by Packless Metal Products Corp., New Rochelle, N. Y.



## EXACT WEIGHT SCALES for Heavy Duty Sacking

Are you meeting your sacking operations economically? EXACT WEIGHT "Iron Horses" are doing the job in many chemical processing industries. Why? Just look at these special features: Short platter fall which eliminates much scale wear . . . long indicator travel for accuracy with speed . . . complete dash-pot protection against foreign matter . . . all working parts enclosed — important in dusty operations . . . weighting accuracy unaffected by out-of-level floors or machinery vibration. Capacity to 150 lbs. — sensitive to 1 oz. over and underweight. If you have a tough sacking operation we believe the EX-  
ACT WEIGHT Iron Horse or its six modifications will solve your weighing problem.



Write for complete specifications for chemical processing operations. Do it today!

### THE EXACT WEIGHT SCALE CO.

31 W. Fifth Ave. Columbus 8, Ohio  
Dept. E Toronto, Canada

When inquiring specify CP8037 — see information request blank, pgs. 2-3

## You Get all 3 When You Choose

### Kewaunee

### Laboratory Furniture

- 1—Most Efficient Design
- 2—Superior Construction
- 3—Savings of Cut-Cost Plan

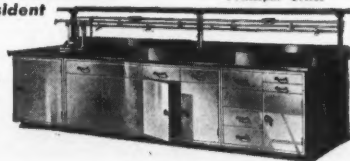
- Kewaunee Engineers are constantly incorporating practical suggestions submitted by America's outstanding chemists, educators and technicians — That means "Modern Design"
- Kewaunee craftsmen are skilled workers in wood or metal who jealously guard the reputation they have gained for fine construction. — That means "Lifetime Service"
- Kewaunee has recently developed the "Cut-Cost System" of unit construction to bring you the finest in Laboratory Furniture at moderate prices. — That means greater savings—better values
- The experienced service of Kewaunee Engineers is yours for the asking — without obligation. If your school has a definite need for Laboratory Furniture, write us for further information as to steps necessary to procure it at this time.

**Kewaunee Mfg. Co.**  
LABORATORY FURNITURE EXPERTS

C. G. Campbell, President

5011 S. Center St.  
ADRIAN, MICH.  
Representatives in  
Principal Cities

Laboratory Wall  
Table  
No. S-2080



When inquiring specify CP8038 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

## IDEAS

### Fused Quartz Offers Interesting Suggestions For New Applications

*War materials requirements and continued research point way to wider utilization of its properties*

A comprehensive booklet on fused quartz traces its history, outlines the development of its many interesting and valuable applications and presents interesting material and suggestions regarding the most recent developments. The physical properties of fused quartz are discussed in highly informative detail and this text is highlighted by a selection of photographs showing articles made from fused quartz, various steps in manufacture such as treatment in electric furnace, grinding and lapping operations. A convenient reference table lists the physical properties and a chart traces the transmission characteristics of quartz and various glasses for ultraviolet and infra red radiation. Among the many pictures of fused quartz products including explanatory text are clear fused quartz ingots, rough cut shapes from clear fused quartz ingots, insulators for high frequency electronic tubes finished to .002, clear fused quartz tubes and rods and translucent tubes and rods. A complete price list is included with this booklet, giving specifications for ingots, rods and tubing. (The material is based on an article in LIGHT Magazine). Copies are available upon request from General Electric Co., (Lamp Div.), Nela Park, Cleveland, Ohio.

## LONG LIFE FLEXIBLE COUPLINGS

Removal of one chain pin disconnects coupling.



The simplicity of design — ease of installation, ease of disconnection, make Diamond Roller Chain Couplings ideal for a great variety of uses. . . . They are all-steel, two sprockets and a length of double-width roller chain . . . . All parts are rugged with no intricate or delicate parts to get out of order. The load is equally divided and driving parts are at the greatest possible radius from the shaft. They are made in sizes that you can hold in the palm of your hand and up to 12-inch Diameter. Ask for Bulletin 12 . . . . DIAMOND CHAIN & MFG. CO., 411 Kentucky Ave., Indianapolis 7, Indiana.

When inquiring specify CP8039 — see information request blank, pgs. 2-3

## HASTELLOY ALLOYS are STRONG and TOUGH!

### and Highly Resistant to Corrosive Media . . . . .

Hastelloy alloys — types A, B, C, and D — combine outstanding corrosion resistance with excellent physical properties. Each was especially developed to withstand the action of one or more of the common mineral acids or other strongly corrosive agents, over a wide range of temperatures and concentrations.

Shown at right is a condensed table of mechanical properties of the Hastelloy alloys. For more complete information on properties, results of penetration tests on these alloys, forms available, and methods of fabrication, send for the 40-page book, Hastelloy High-Strength Alloys for Corrosion Resistance.

Alloys	Forms	Tensile Strength lb. per sq. in.	Elongation in 2 in., per cent	Hardness, Brinell
A	Cast	69,000- 77,000	8-12	155-200
A	Rolled, Annealed	110,000-120,000	40-48	200-215
B	Cast	75,000- 82,000	6-9	190-230
B	Rolled, Annealed	130,000-140,000	40-45	210-235
C	Cast	72,000- 80,000	10-15	175-215
C	Rolled, Annealed	115,000-128,000	25-50	160-210
D	Cast	36,000- 40,000	0	425-485

★ BUY UNITED STATES WAR BONDS AND STAMPS ★



## HAYNES STELLITE COMPANY

Unit of Union Carbide and Carbon Corporation

New York, N. Y.  Kokomo, Ind.

Chicago—Cleveland—Detroit—Houston—Los Angeles—San Francisco—Tulsa

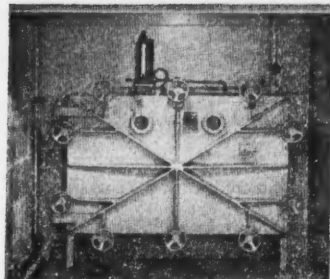
## HIGH-STRENGTH NICKEL-BASE ALLOYS FOR CORROSION RESISTANCE

The word "Hastelloy" is a registered trade-mark of Haynes Stellite Company.

When inquiring specify CP8040 . . . see information request blank, pgs. 2-3

*How to avoid fire hazard  
in process heat-*

## CHROMALOX Electric HEATING UNITS

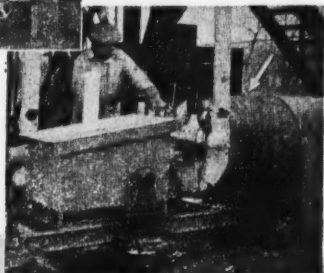


### DRYING OVEN FOR INFLAMMABLE MATERIAL

The oven is operated at 110 deg. F. It is water jacketed. The water is heated by Chromalox electric immersion heaters, inserted through the tank wall, into the water. Temperature maintained by thermostat.

### OIL CIRCULATION FOR HEATING EXPLOSIVES

The oil is heated by Chromalox electric strip heaters, clamped to outside of the tank. Oil is heated to 500 deg. F. Automatic control prevents overheating and carbonizing of oil.

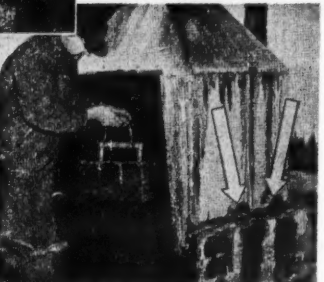


### SOFTENING & MOLDING INFLAMMABLE PLASTIC

The job is molding rods of pyralin, first softened in boiling water for molding. Water is heated by Chromalox immersion heaters controlled by three-heat switch.

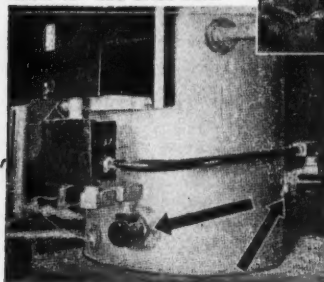
### HEATING AN OIL TEMPERING BATH

The oil is heated to 550 deg. F. by Chromalox immersion heaters of 3 1/2 kw. rating. Thermostat and magnetic contactor maintain accurate temperature. Tank is 1/4-in. steel plate, welded, surrounded by insulation and brick work.



### HEATING TANK IN DUST-LADEN AIR

A flour mill needed process hot water. Chromalox immersion heaters screwed into the tank wall keep the water at 120 deg. F. No flame nor danger of dust explosion.



Have you a heating job that might be better done electrically? Ask the Wiegand consulting staff. A short description of conditions with a pencil sketch, is all they need. Chromalox 64-page Catalog on request.

**EDWIN L. WIEGAND COMPANY**  
7517 Thomas Blvd., PITTSBURGH 8, PA.

When inquiring specify CP8041 — see information request blank, pgs. 2-3

## IDEAS

### Plastic Name Plates For Diesel Steam Engines And Equipment

*Resist corrosion, retain color and provide visibility;  
require no polishing*

Among the many interesting and practical applications of plastics is that for name plates on machinery, motors, equipment and engines both steam and Diesel where resistance, strength and similar fool-proof service qualities are desired. Injection molded Tenite (Tennessee Eastman Corp.) are now being used for such applications particularly on Diesel and steam engines. They do not corrode and the plastic with its color inherent forms a contrast of distinctive outline against the metal of the engines. Remler Co., Ltd., San Francisco is molding such plates.

### Plexiglas Ear Plugs Deadens Noise

*Molding from scrap left from bomber noses and gun  
turrets cuts their cost to low figure*

Earplugs to protect the hearing of workers at noisy machines are now made of Plexiglas from which face shields, machine guards, shields for soldering pots and similar devices are produced. The plugs were designed by a worker at McClellan Field, California and formed from scrap left over from Plexiglas used in bomber noses and gun turrets. Originally the plugs were turned out on lathes from new Plexiglas purchased direct from the maker (Rhom & Haas Co., Philadelphia.) Because of the labor

### Available Now for Plant Lighting Improvement and Rehabilitation

**BENJAMIN  
Vapor-  
Tight  
Units**

WITH BOWL  
REFLECTOR

WITH FLAT CONE  
REFLECTOR

WITH SYMMETRICAL  
ANGLE REFLECTOR

WITHOUT REFLECTOR

For the many plant locations where lighting units are exposed to moisture, vapors, weather and non-combustible dusts, the use of Benjamin Vapor-Tight units will:

1. Reduce Maintenance Time and Expense
2. Improve the Lighting of the Location

These units have a long industrial record for extremely satisfactory service. Built of non-corrosive, easily cleaned, Benjamin Lifetime Porcelain Enamel—with a sealed-in lamp construction listed by Underwriters' Laboratories as Vapor-Tight—designed throughout for severe service, Benjamin Vapor-Tight units are available in the many types and sizes required for various industrial uses. For FREE BULLETIN, write Benjamin Electric Mfg. Co., Product Information Department LL, Des Plaines, Illinois

**BENJAMIN**  
*Lighting Equipment*  
DISTRIBUTED EXCLUSIVELY  
THROUGH ELECTRICAL WHOLESALERS I

When inquiring specify CP8042 — see information request blank, pgs. 2-3



### JUSTRITE SAFETY PRODUCTS

Why leave oily waste and other 'flammable materials around where spontaneous combustion or a carelessly dropped match can start a disastrous fire? Use Justrite Oily Waste Cans — sizes, 5 to 14 gals. — prevent fires before they start.

For safe handling of benzene and other 'flammables, use Justrite Safety Cans.

Ask your dealer or write direct for details and prices.

**JUSTRITE MANUFACTURING COMPANY**  
2052 N. Southport Avenue, Chicago, Ill.

When inquiring specify CP8043 — see information request blank, pgs. 2-3

### AN All-Electric ADJUSTABLE-SPEED DRIVE FOR A-C. CIRCUITS

SPEED RANGES up to 16 to 1

SIZES 1 TO 30 hp.

**RELIANCE  
V.S.  
DRIVE**

**SPEED CHANGES.**  
Speed adjusted smoothly over a wide range while machine is in operation.

**QUICK STOPPING.**  
Obtained electrically from speed adjuster handle or stop button.

**SLOW FOR THREADING and INCHING.**  
Safe for setting-up and for close inspection in process.

**SMOOTH ACCELERATION.**  
No shocks. Smooth acceleration and deceleration to protect light material in motion.

ALSO: A direct space-saving drive; speed-control convenience without limitations; reversing; start and stop without interfering with speed setting; ample starting torque.

Send for your copy of Bulletin 311 — FREE

**RELIANCE ELECTRIC & ENGINEERING CO.**

1088 IVANHOE ROAD

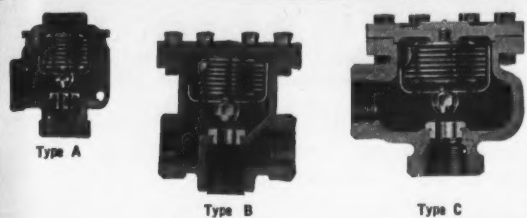
CLEVELAND, OHIO

Sales Offices in Principal Cities

When inquiring specify CP8044 — see information request blank, pgs. 2-3

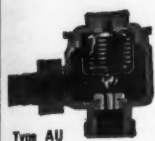
CHEMICAL PREVIEW





Prevent Freeze-Ups  
this Winter with

## NICHOLSON THERMOSTATIC TRAPS



Type AU

Full Details in  
Bulletin No. 843

All types drain completely and automatically . . . same adjustment used for any pressure, vacuum to maximum allowable . . . discharge air as efficiently as water . . . complete drainage when cold prevents freezing . . . closes immediately when steam contacts bellows. Five types, sizes 1/4" to 2", pressures up to 225 lbs.

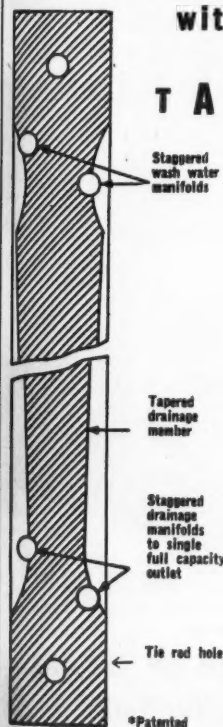
W. H. NICHOLSON & CO., 181 Oregon St., Wilkes-Barre, Pa.

**NICHOLSON Traps**  
THERMOSTATIC • PISTON AND WEIGHT-OPERATED STEAM  
GASOLINE AND COMPRESSED AIR TRAPS

CONTROL VALVES • FLOATS • MANDRELS • STEAM AND AIR SEPARATORS

When inquiring specify CP8045 — see information request blank, pgs. 2-3

## THE FILTER PLATE with TAPERED DRAINAGE CHANNELS



**DRAINAGE CHANNELS**  
to give Extra Capacity

The ever-increasing depth of the channels in the F-M FREEFLOW Filter Plate\* takes care of the progressive inflow of filtrate through the cloth without it backing up. This means extra capacity over that of ordinary plates. Staggered drainage manifolds mean that the section through the plate at that particular point has not been weakened by the borings. This means a longer lasting plate.

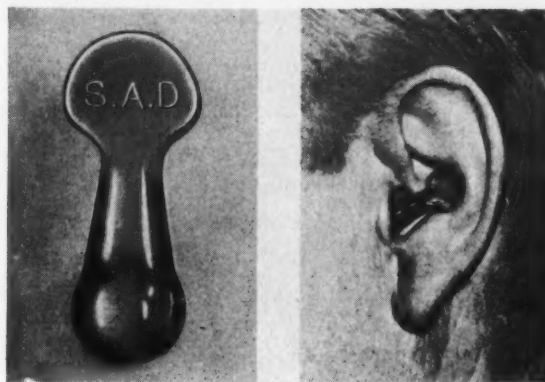
Both features suggest that the F-M FREEFLOW Filter Plate is the better buy. Why not try one and find out for yourself? In writing, give full details of your problem in addition to size of plate desired. There are several different materials of construction and we would like to know the solution being filtered before making recommendations.

**Filter Media Corp.**  
Irvington-on-Hudson, N. Y.  
Chicago Salt Lake City

When inquiring specify CP8046 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

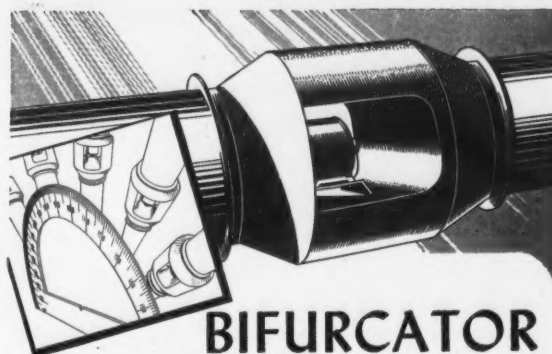
## IDEAS



EAR PLUG MOLDED FROM PLEXIGLAS . . photo shows plug contour (left) and right partially inserted in ear

involved they were quite expensive. However, the idea of molding the plugs from the scrap was conceived. Formed six at a time the plugs are now low in cost. They are colored to make them more visible when dropped on the floor.

For complete information regarding products described in this issue a handy request slip is provided between pages 2 and 3. Check the items that interest you, fill in name and address and send it to publishers. Information will come to you promptly.



## BIFURCATOR installs right in the Duct AT ANY ANGLE

DeBothezat Bifurcators for conveying corrosive high temperature and hazardous fumes, install right in the exhaust ducts. They can be installed at any angle from horizontal through vertical. The "Axial-Flow" pressure fan which moves the fumes has a non-overloading power characteristic for protection against costly motor failure. The motor is located in a through-ventilated chamber isolated from fumes and readily accessible. Available in a wide range of sizes and capacities. Details on request.



**DeBothezat**

VENTILATING EQUIPMENT

Division of  
American Machine and Metals Inc., East Moline, Illinois

When inquiring specify CP8047 — see information request blank, pgs. 2-3

## .....longer drive life

Every Baldwin-Duckworth sprocket is built to the same high precision standard as Baldwin-Duckworth roller chain belts.

All Baldwin-Duckworth sprocket teeth are cut to the Baldwin Improved American Standard tooth form. This is different from ordinary tooth forms in that it allows up to 50% more pitch elongation in the chain before it will fail to mesh with the sprocket. *This means longer drive life.*



(Catalog M contains much information on a variety of types of sprockets as well as complete tables on diameters and dimensions. Write today for your copy or CALL THE B-D MAN.)



Type C—a sprocket with hubs on both sides—a wide range of sizes available.

BALDWIN-DUCKWORTH • DIVISION OF CHAIN BELT COMPANY • SPRINGFIELD, MASSACHUSETTS

# BALDWIN ROLLER CHAIN BELTS...

When inquiring specify CP8048 . . . see information request blank, pgs. 2-3

## "Hold Everything"

Have you post-war production or operating plans involving use of hydraulic lines?

Then investigate . . . AEROQUIP Self-Sealing Couplings "hold everything"—permit instant disconnection of liquid-carrying lines without loss of fluid, or inclusion of air on reconnection. High and low temperatures; pressures to 2000 lbs.

*War-tested around the world  
on American aircraft.*

# AEROQUIP

## SELF SEALING COUPLINGS

AND

## HOSE LINES WITH DETACHABLE FITTINGS



AEROQUIP improves hydraulic hose line operation with detachable fittings, instantly reusable with new AEROQUIP hose, tailored on the spot. Ends delays. Simplifies size and length combinations.

**AEROQUIP CORPORATION**

**JACKSON,  
MICH., U.S.A.**

When inquiring specify CP8049 — see information request blank, pgs. 2-3



## NEW LITERATURE ★

The following literature has been issued recently by manufacturers of the products discussed and is available to chemical process manufacturing executives on request. Address requests to the publishers by using handy request form, pages 2-3, or write to the manufacturers direct.

### Pipe Threaders, Cutters, Reamers, Vises and Portable Power Conversion Units

A most complete selection of pipe tools is given an unusually interesting and practical presentation that will provide information of value to all those concerned with such equipment. All the various tools and accessories are shown in large, highly detailed photos that emphasize their features of construction and design and various applications. Complete instructions for proper use and specification tables that give all the data desired for making selections are also given. The wide selection offered includes: ratchet threaders with either open or enclosed ratchet teeth, fully adjustable models with which the operators either change dies or change die heads, small self-contained threaders of range 1/4-3/4 in., 3-way threaders, a dual range tool combining two popular threading ranges (use 7 small heads and by using two larger heads range is extended to 2 ins.), wheel pipe cutters, sawing vises, automatic knife pipe cutters, gear driven models for hand or power use and heavy duty pipe and bolt machines. Portable power units for converting hand machines are also shown. This forty-eight page catalog is available upon request. Specify Number 44.

BEAVER PIPE TOOLS, Dept. CP, Warren, Ohio.

When inquiring specify CP8050 — see information request blank, pgs. 2-3



Towmotor does the heavy work in all handling operations. Towmotor and one man (or woman) loads and moves material faster, stacks it higher than a whole gang of manual material handlers. Time and space are saved — man or womanpower are more fully utilized. For complete information write Towmotor Corporation, 1218 E. 152nd Street, Cleveland 10, Ohio and . . .

ASK FOR "DATA FILE."

# TOWMOTOR



THE 24-HOUR ONE-MAN-GANG

When inquiring specify CP8051 — see information request blank, pgs. 2-3

### Engineering Service Bulletins on Selection, Operation and Proper Maintenance of Speed Reducers

A series of engineering service bulletins covering selection maintenance and operation of speed reducers provide unusually concise and practical data for production men and others who are concerned with such equipment. One of these is titled — "Torque vs. Horsepower," presents a brief discussion of these terms, deals with formulae, presents typical problems and solutions and on the back page illustrates some of the maker's reducers emphasizing full anti-friction bearing equipment. Another discusses overhead loads on speed reducer shafts, gives some very useful pointers, outlines solutions for several more common problems, suggests means of avoiding outboard bearings in some cases. The third covers the important matter of installation, stressing the need for careful selection and then giving instructions for proper alignment. Proper procedure in lubricating is outlined and the causes of too high oil temperature are listed. A special sheet contains lubrication recommendations and gives grades specified for each model. These bulletins are available upon request.

WINFIELD H. SMITH INC., Dept. CP, Springville, (Erie County), N. Y.

When inquiring specify CP8052 — see information request blank, pgs. 2-3

## SEND FOR THIS NEW CATALOG!



Data, specifications and illustrations . . . factual and helpful . . . about Alberene Stone, the material that outlasts the building.

**ALBERENE STONE CORP. OF VIRGINIA**  
**419 4th Avenue, New York**

When inquiring specify CP8053 — see information request blank, pgs. 2-3



## NEW LITERATURE

### Steam Traps Applications and Data on How to Size Them

A complete line of steam traps to meet a wide variety of industrial requirements is illustrated and described in a twenty-four page catalog. Among the long list of applications listed for which the proper traps are specified are air lines, ammonia lines, drying rooms, dry kilns, jacketed kettles, separators. Open bucket type inverted bucket, expansion and closed (ball) float type are all illustrated and described. Specifications and related data are most complete and there is a steam table (properties of saturated steam). Catalog available on request. (No. 66).

STRONG CARLISLE & HAMMOND CO., Dept. CP, 1352 W. 3rd St., Cleveland, Ohio.

When inquiring specify CP8054 — see information request blank, pgs. 2-3

### Chart Shows Loss In Dollars For Any Recovery Efficiency of Collecting Systems

A four page folder that opens out to provide a large chart 15 x 15 inches that provides a visually impressive, convincing story of the importance of loss in contrast to the amount collected in many cases. It is pointed out that selection of collection equipment is intimately tied in with the value of the material and quantities to be handled. With some materials having a high replacement cost and ordinarily being handled in large quantities, efficiencies well over 99% are justified. Here even very small decreases in collection efficiency greatly increases the loss and make a very costly difference per day in operating costs. Illustrations show applications such as electro chemical, metallurgical, cement, petroleum, foundries and in soap and paper plants. The chart permits quick, accurate determinations of daily loss in dollars for any recovery efficiency, and for a wide range of dust valuations per ton. This combination chart-folder will be sent on request.

WESTERN PRECIPITATION CORP., Dept. CP, 1061 W. 9th St., Los Angeles, 15, Cal.

When inquiring specify CP8055 — see information request blank, pgs. 2-3

### Waterproofing and Protecting Bare and Insulated Underground Industrial Piping

Thirty-six page catalog contains a highly informative presentation of long established and practical method of protecting underground piping. It is concerned with both the waterproofing and protecting of both insulated and bare piping which is buried. This system is applied at the factory to pipes of the required length. The principle involved consists of encasing the piping, or the insulation around the piping with a heavy layer of high melting point asphalt (non-porous). The standard insulation used is 85% Magnesia. For pipes over 2 in. supports are provided within the structure to prevent the weight of the pipe from resting on the insulation. A cylindrical jacket of galvanized steel of a diameter to provide an air space of one inch around the insulation is placed concentrically around the pipe, which is then ready for the asphalt. Some of the advantages said to be provided by this insulated pipe are: permanently waterproof, elimination of electrolysis and corrosion, ease in adding or removing pipes in multiple installations, little trenching or field work, no rollers or pipe supports required. Numerous pictures of actual installation in various stages of completion and complete explanation of installation make it easy to visualize applicants to individual requirements.

DURANT INSULATED PIPE CO., INC., Dept. CP, 1015 Runnymede St., Palo Alto, Calif.

When inquiring specify CP8056 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

....write to **WILSON** for  
Equipment used for:

1. WATER PURIFICATION
2. CHEMICAL PROPORTIONING
3. FILLING LIQUIDS

More than 1000 Wilson Pulsafeeders, operating under abnormal conditions for the Armed Forces, have proved the effectiveness and fool-

proofness of this all-time simplified equipment.

Positive displacement. No contact between chemical

being pumped and operating parts. No packing glands. No

diaphragm breakage. Manually adjustable. Handles liquid chemicals . . .

from one cubic centimeter to 400 gallons per hour . . . with

**ACCURACY GUARANTEED AT BETTER THAN 1/8 OF 1%**

Whether your need is for ① Water Purification or sewage treatment equipment with its well known requirements. Whether it is for ② in the ever-expanding fields for dependable positive displacement Proportioning equipment or whether it is for ③ in the field of Liquid Filling Machines for any non-combustible liquid . . . write to Wilson, giving as much information as possible as to your needs, immediate or future.

YOUR INQUIRY WILL RECEIVE PROMPT INTELLIGENT ATTENTION

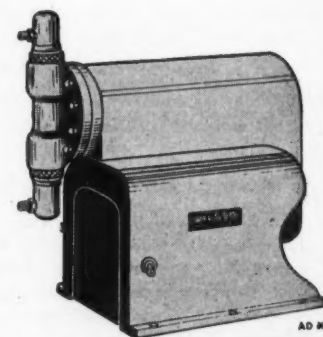
# WILSON

Est. 1923...with experience in allied lines since 1914

## CHEMICAL FEEDERS, INC.

Two complete plants—MANUFACTURING Chemical Feeders for Water Conditioning and Processing Industries... and by recent acquisition, Manufacturers of CLEVON and BUFFALO Automatic LIQUID FILLING MACHINES.

207 CLINTON STREET (P. O. Box 998) BUFFALO 4, N. Y.



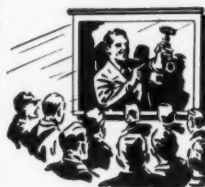
When inquiring specify CP8057 . . . see information request blank, pgs. 2-3



**S**TILL greater shortages of man power and reduced supplies of vital equipment are threatened by war. Yet no plant can operate efficiently without adequate care for its piping systems.

Seeing and hearing this film will give new, inexperienced maintenance workers a quicker grasp of their jobs—a clearer understanding of how to handle valves, fittings, and piping accessories to keep pipe lines flowing with fewer interruptions. To "old timers" it will recall many forgotten "tricks of the trade."

As the leading maker of valves and fittings, Crane Co. offers this film in today's emergency—to share with all industry—its 88-year experience in flow-control engineering. "Piping Pointers" will be available for showing in any plant, trade school or industrial training center.



Made on 16mm. film.  
Showing time approximately 30 minutes.

### Showings Arranged by Your Crane Branch

The Crane Branch serving your area will gladly supply full information about "Piping Pointers" and arrange a convenient showing in your plant. Reserve a date for an early showing by calling your Crane Representative today. CRANE CO., General Offices: 836 South Michigan Ave., Chicago 5, Ill.

# CRANE VALVES

When inquiring specify CP8058 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Pumping Water from Deep Wells

Improved methods of water pumping from deep wells are described in bulletin which discusses and illustrates two basic methods of raising water — turbine and hypocycloidal. The difference between oil and water lubrication is also shown. Cross sectional views of deep well pumps, revealing the shafting and submerged elements, graphically demonstrate the operation of lifting water from any depth. Various types of pump heads are included, to illustrate the application of power, for direct motor connection, belted drives, geared power and combinations of these. Bulletin Number 141 A on request.

PEERLESS PUMP CO., Dept. CP, 301 West Avenue 26, Los Angeles, 31, Cal.

When inquiring specify CP8059 — see information request blank, pgs. 2-3

### Operating Manuals on Portable and Stationary Power Operated Pipe Threading Machines

Four manuals give complete information regarding operation and maintenance of portable and stationary pipe threading machines. The first of these covers a series of machines incorporating the open type vise and revolving diehead principles. These features make it possible to thread bent pipe as well as straight, nipples, rods and bolts without complicated change of equipment. Second is devoted to portable power drive for hand pipe tools, another covers a complete, portable pipe threading machine (power driven) and the fourth is a complete, light weight, portable power-driven machine.

OSTER MFG. CO., Dept. CP, 61st & Carnegie Ave., Cleveland, Ohio.

When inquiring specify CP8060 — see information request blank, pgs. 2-3



### AFTER THE WAR....New Horizons

With the "GO" signal . . . rapid strides in all industries will fill the gap occupied by war.

And PALMER will give you a full dollar value with the Finest Thermometer ever to be made.

In your Post War plans . . . you don't want to forget that Palmer Thermometers have an important place in your plant.

Today . . . for GOOD Thermometers remember:

1. Easy-Reading "Red-Reading-Mercury"
2. Guaranteed accuracy
3. Built for long life

(write for catalog)

### THE PALMER COMPANY, Mfrs.

INDUSTRIAL, LABORATORY, DIAL & RECORDING THERMOMETERS  
2519 Norwood Ave., Cincinnati, Norwood, O.—Canadian Plant: King & George Sts., Toronto

When inquiring specify CP8061 — see information request blank, pgs. 2-3



**NOTE:**  
Baker has re-designed many of its trucks to meet industry's needs for increased production:  
1. Longer continuous operation  
2. Faster handling of material  
3. Lower maintenance

The same advantages which have been designed into these trucks to speed the production of war goods also apply to normal peacetime material handling. The model illustrated, designated as Type H-3, is of 6,000 lb. capacity.

Improvements include a new hydraulic lift system which provides efficient, positive control of hoisting and lowering, increased battery compartment permitting longer continuous operation, operator's guard integral with frame for greater strength and safety, and other features which provide increased efficiency and easier maintenance...The new improved design is also available in 4,000 lb. capacity. (Type H-2.)

Write for complete information

BAKER INDUSTRIAL TRUCK DIVISION of the Baker Rauland Company  
2163 WEST 25th STREET • • • CLEVELAND, OHIO

## Baker INDUSTRIAL TRUCKS

When inquiring specify CP8062 — see information request blank, pgs. 2-3

## INVESTIGATORS FIND THESE 5 OUTSTANDING FEATURES in Blaw-Knox GRATING

Non-slip because of the twisted bar

Self-Cleaning no sharp corners to clog

Maximum open area for light and air

Easily maintained paint reaches entire surface

Electroformed one-piece construction

Send for FREE paper weight size sample

BLAW-KNOX DIVISION of Blaw-Knox Co.  
FARMERS BANK BUILDING PITTSBURGH, PA.

NAME \_\_\_\_\_  
STREET \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_

When inquiring specify CP8063 — see information request blank, pgs. 2-3



# TO MEASURE...

## the Viscosity of Liquids Quickly and Accurately

**A**N economical, time-saving device—

Requires no special training to operate it.

Makes measurements in 30 seconds.

Call the nearest G-E office or write for Bulletin GEA-3618.

If you have ANY kind of measurement problem, call or write our nearest office for information on how the G-E Special Products Section can help you meet your individual requirements. **General Electric Company, Schenectady, N. Y.**

The G-E Zahn viscosimeter

800-9-8851

**GENERAL ELECTRIC**

When inquiring specify CP8064 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Equipment Fabrication Service for the Process Industries

Four page bulletin describes and illustrates facilities of equipment organization for producing evaporators, storage, tanks, exchangers and similar units to meet the particular requirements of specific installations. Among the many processes served are: Acid works, explosive plants, synthetics, dyestuffs, refineries, soap, plastics, textiles and pharmaceuticals. Numerous illustrations shows actual equipment in service. The bulletin emphasizes the fact that all codes and tests are met and lists in detail facilities for fabricating all commercial metals.

EDGE MOOR IRON WORKS, INC., Dept. CP, Edge Moor, Del.

When inquiring specify CP8066  
— see information request blank, pgs. 2-3

### Radiant Heat Drying Lamps

Twelve page booklet discusses radiant heat and its advantages: speed, low initial and maintenance cost, flexibility, ease of control, reduced space requirements. Design of radiant heat installations is dealt with, the arrangement and spacing of equipment and electrical circuit design. Specific data is given for three general classes of applications for industrial purposes: evaporation of water or other solvents, paint drying and increasing temperatures of materials. Formulas are stated for determining the wattage required for each application. Booklet A-3817 available upon request.

WESTINGHOUSE ELEC. & MFG. CO., (Lamp Div.) Dept. CP, Bloomfield, N. J.

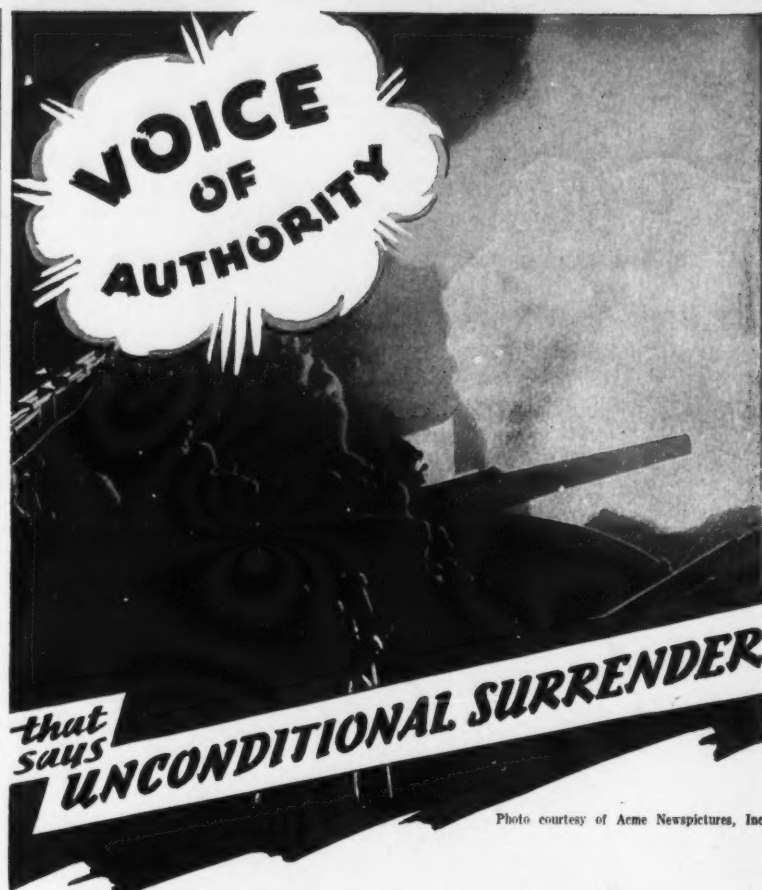
When inquiring specify CP8067  
— see information request blank, pgs. 2-3

### Overhead Handling Equipment for Processing Plants

Overhead handling equipment that meets a wide variety of both general and special requirements is given unusually interesting pictorial presentation. Engineering, construction and operating features are emphasized in large photos showing equipment in actual use in many representative industries. A series of two page spreads is devoted to various processing industries. In addition to these illustrations there are several sections explaining in detail such advantages as twin section track, one piece hanger, narrow flanges, overlapping splice, forged wheels, pressure lubrication. Bakery, dairy, cannery and fruit packing among the various food applications shown. Booklet — "Overhead Handling Equipment" available on request.

AMERICAN MONORAIL CO., Dept. CP, 13107 Athens Ave., Cleveland, Ohio.

When inquiring specify CP8068  
— see information request blank, pgs. 2-3



**W**ITH a hellish roar and a blaze of light this gun aboard a U.S. warship hurls a shell at an enemy raider lurking in the darkness.

Like a wounded tiger the marauder fights back viciously. But, outgunned and outfought, the attacker generally plunges to the bottom to gather slime and corrosion.

The continued successes of our all ocean Navy are understandable, however. Our ships are the best engineered—best equipped—best manned vessels on the seven seas. Their guns will continue to "Speak with Authority" until the day of "complete unconditional surrender".

Drainators are doing an outstanding job on many of these ships. Operating *continuously* on various kinds of steam using equipment—*completely* eliminating condensate and air—they aid in maintaining readiness for typically American instantaneous, spectacular and effective action.



**The COE MANUFACTURING Co.**  
PAINESVILLE, OHIO

## DRAINATOR • THE ADVANCED STEAM TRAP

Write for Bulletin 903-A explaining the exclusive Drainator features responsible for exceptional service in thousands of industrial applications.

When inquiring specify CP8069 — see information request blank, pgs. 2-3

*Just off the press...*

**NEW CIRCULAR**

*describing*

**TEMPERATURE and HUMIDITY CONTROL**

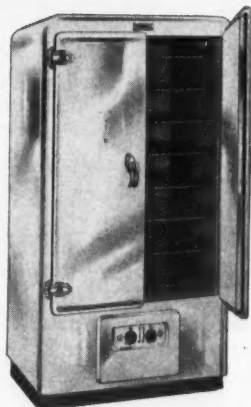
### PRECISION CONTROL Speeds Production

★ Learn how leading manufacturers guard quality and control close tolerance work to AN specifications. Let us help you solve your problems of temperature and humidity control. Any size cabinet or complete room conditioned to your specifications. Write for bulletin No. 170 today. Check a few of the many uses listed below:

- ★ Testing electrical equipment.
- ★ Processing wood, fabric, plastics.
- ★ Varied radio and instrument testing.
- ★ Moisture absorption control. Curing.

**ANETSBERGER BROS.** 3320 Elston Ave. Chicago, Illinois

When inquiring specify CP8065 — see information request blank, pgs. 2-3



# Hand Book on Higher Vacuum



## Free For The Asking

A comprehensive hand book on vacuum practice, revised, second printing just off the press . . . particularly important with the increasing use of higher vacuum. Contains numerous charts, tables of boiling points of water and solvents at various vacuums, a simplified steam conversion table, practical data on installing and operating vacuum systems, etc. An invaluable reference book for engineers . . . plus a complete catalog of Stokes High Vacuum Pumps, in capacities from 10 to 225 cu. ft. per min., to maintain vacuum within a fraction of a millimeter of absolute. If you haven't a copy on file, write for one.

See our exhibit at the  
**CHEMICAL SHOW — Booth 224**

## F. J. STOKES MACHINE COMPANY

5974 Tabor Road Olney P. O. Philadelphia, Pa.  
Representatives in New York, Chicago, Cincinnati, St. Louis, Cleveland, Detroit  
Pacific Coast Representative: L. H. Butcher Company, Inc.

**F.J. Stokes**



When inquiring specify CP8070 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Preventing Welding & Cutting Fires

Sixteen-page-booklet (pocket size) contains brief, practical discussion of chief causes of fire and practical means of preventing them in welding and cutting operations. Based on data sources which include users and manufacturers and fire, safety associations in addition to International Acetylene Assn. Available from various equipment manufacturers or from address below in limited quantities.

INTERNATIONAL ACETYLENE ASSN., Dept. CP, 30 E. 42nd St., New York, 17, N. Y.

When inquiring specify CP8071 — see information request blank, pgs. 2-3

### Suggestions for Packing and Shipping By Air

"How to Ship by Air Express" is the title of a booklet recently made available by manufacture of shipping containers. As the title implies the book gives detailed information on all important points. The material is presented in question and answer style providing simplified and direct to the point information. It explains the important part corrugated cartons play in practical and economical preparation and safe delivery of products shipped by air express. All the various questions on sizes, weights, restrictions, preparation and scheduling of packages for shipment are answered. Charts and diagrams of planes and cargo compartments illustrate the factual data presented. A number of corrugated boxes especially adapted for air shipments are described and illustrated. They conserve shipping space and speed operations in packing and sealing. Booklet available upon request.

HINDE & DAUCH PAPER CO., Dept. CP, Sandusky, Ohio.

When inquiring specify CP8072 — see information request blank, pgs. 2-3

Rapid  
Accurate

## MOISTURE CONTROL

with the  
**DIETERT**

## MOISTURE TELLER



. . . The Dietert Moisture Teller determines moisture content accurately and rapidly by forcing electrically

heated air through the test sample. The drying temperature may be closely controlled with thermo regulator. Cost of operation is very low.

For plant and laboratory use in the chemical, ceramic, food, foundry, paper, pulp, rubber, salt, sugar, textile and tobacco industries.

Send TODAY for full information

## HARRY W. DIETERT CO.

9330 ROSELAWN AVENUE, DETROIT, MICHIGAN

When inquiring specify CP8073 — see information request blank, pgs. 2-3

## FILTER Your LIQUIDS WITH BOWSER FILTERS!

### A Type

FOR MANY USES

BATCH TYPE

CONTINUOUS TYPE

CLOTH BAG TYPE

WIRE GAUZE

PLATE TYPE

GRAVITY TYPE

PRESSURE TYPE

SELF-CLEANING

TYPE

BACK WASH TYPE

DIATOMACEOUS

EARTH TYPE

There is more to the filtering of liquids than the quality of the filtrate. Flow per hour . . . length of filtering cycles . . . frequency of cleaning . . . operating costs . . . labor . . . and original investment are all factors of prime importance. To gain the advantage of all these factors is the reason so many industries use Bowser Filters. A wide range of pressure filters, diatomaceous earth filters, cloth bag type, automatic self-cleaning filters, batch and continuous type gravity filters in many sizes and for many liquids are at your service. To filter right . . . write Bowser today!

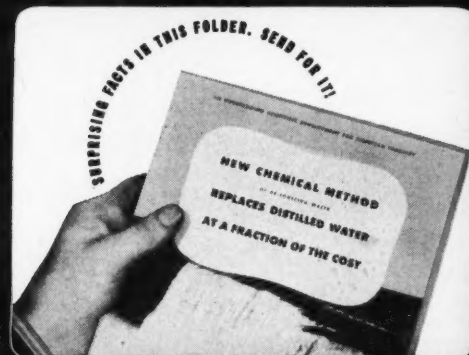
S. F. BOWSER & CO., Inc.  
Fort Wayne, Indiana



**LIQUID CONTROL SPECIALISTS SINCE 1885**  
METERING • DISPENSING • STORING • LUBRICATING • FILTERING • DISTILLING

When inquiring specify CP8074 — see information request blank, pgs. 2-3

## DE-IONIZED WATER REPLACES DISTILLED WATER!



10,000 GALLONS FOR LESS THAN A DOLLAR on average raw water supply! When water supply is low in dissolved solids, cost may be considerably less! Capacities: 100 gallons up to 50,000 per hour.

ILLINOIS WATER TREATMENT CO.  
849 CEDAR STREET ROCKFORD, ILLINOIS



When inquiring specify CP8075 — see information request blank, pgs. 2-3



## NEW LITERATURE

### Welding Stainless Steels

The welding of stainless steel is given unusually comprehensive and advanced treatment in a sixty-four page book — 8½ x 11 and which uses colored illustrations and drawings generously to clearly explain all of the many interesting and practical directions given. A brief foreword points out the basic differences in the welding techniques and procedures employed for carbon steel and stainless steel. In order to explain the how and why for the directions given to the best advantage, illustrations are emphasized. Instead of the customary flat photos and sketches full color perspective diagrams and drawings of an unusual type are employed to illustrate the various methods used and the physical and chemical phenomena which occur (or must be prevented from occurring) when stainless steel is welded. It provides practical instruction for the beginner in stainless steel welding and is also of interest to engineers, designers and metallurgists. Available on request.

ALLEGHENY LUDLUM STEEL CORP., Dept. CP, Brackenridge, Pa.

When inquiring specify CP8076 — see information request blank, pgs. 2-3

### Horizontal Centrifugal Pumps

Sixteen-page-catalog with attractive heavy cover for permanent filing presents complete information concerning a wide selection of horizontal centrifugal pumps. All these horizontal pumps are of the open impeller type employing no close fitting parts, sealing rings or similar construction. The impeller is the only moving part and is of the overhung type. That is the pump has bearings on one side of the impeller only and consequently needs only one packing gland. Pumps are made of most any material required. Both self-priming and non-priming pumps are illustrated and described in detail. Among the non-priming models, the type Q is featured. In this the liquid takes an extremely short path of travel from the suction to the discharge and with full pressure developed in less than a full rotation of the impeller. It is designed for chemical as well as hydraulic service and is said to handle large quantities of air if both air and the liquid are fed to the pump. Bulletin Number 50 on request.

THE La BOUR CO., Dept. CP, Elkhart, Ind.

When inquiring specify CP8077 — see information request blank, pgs. 2-3

### Bag Sealing Equipment for Small, Medium and Large Size Bags

Bag sealing machines for rapid, continuous sealing of all types of paper bags are illustrated and described in attractive standard size booklet. These units may be used in connection with bags with one or more liners, glassine bags, cellophane bags and burlap bags with paper linings. The same machines may be used to close the bottoms of empty bag tubes before filling and for closing the top ends of filled bags. The text points out that in some instances it is practical to seal two bags at a time, and that in such cases 2000 bags per hour may be closed by one worker. The closures are described as withstanding rough handling as sift-proof due to stapled reverse double fold. In addition to standard model for bags of ten inch maximum width there is also a larger twenty-four inch model. Bulletin 154 available on request.

SARANAC BAG SEALERS, INC., Dept. CP, Benton Harbor, Mich.

When inquiring specify CP8078 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

# Streamlined

## FOR SMOOTH, EVEN FLOW OF STEAM, WATER, AIR, OIL, ETC.



No detour around a dividing wall

No right angle directional change in flow because of a seat wall

No valve stems, springs or other parts to break up flow

TURBULANCE ELIMINATED

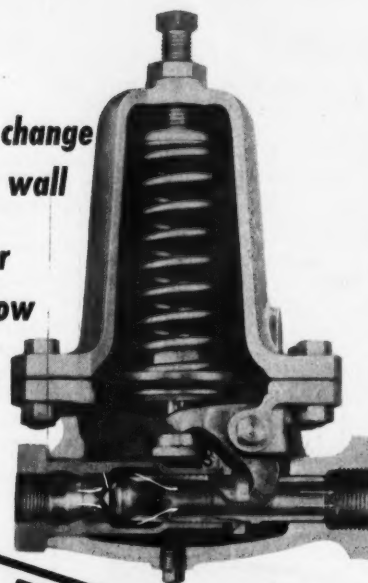


**CASH STANDARD**  
*Streamlined*  
PRESSURE  
**REDUCING VALVE**  
TYPE 1000

The streamlined or straight line flow such as the above pattern shows eliminates turbulence, giving highest valve capacity. There are no complicated parts to get out of order and no small ports or passages to clog up. There is only one vital moving part, the seat piston, which is opened in a positive manner by the force of the initial pressure and closed in an equally positive manner by the force exerted by the delivery pressure on the diaphragm.

Supply line pressure may change, demand may change, but you still have smooth action and close dependable regulation.

Ask for Bulletin 1000 that explains the reasons for such performance as maximum pressure when it is needed most and accurate pressure control.

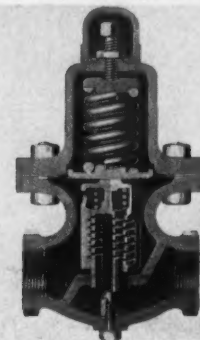


Trouble-free service  
Smooth operation  
Tight closure  
Accurate regulation  
Elimination of failures  
Constant delivery pressure  
No spoilage  
Maintenance needs practically zero  
Speedier production results  
Cost-saving operation

**CASH STANDARD**  
CONTROLS...  
VALVES

**A. W. CASH COMPANY**  
DECATUR, ILLINOIS

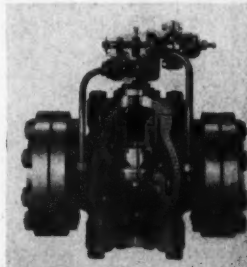
OTHER VALVES  
from the  
**CASH STANDARD**  
LINE



Cash Standard Type 4190 Valve; holds constant back pressure on inlet side regardless of variation in outlet pressure or changes in load. A multiport, large capacity valve. Used on suction line in refrigeration practice. Also as bypass valve for oil pumps. Iron or bronze bodies; iron trim. Screwed ends ½" to 2"; flanged ends 2" to 6"



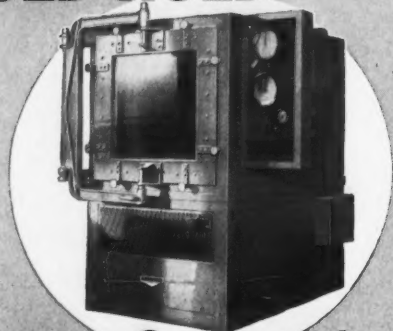
In automatic liquid level work. Cash Standard controls: (1) to hold the level within the closest kind of limits; (2) to do it dependably. In the cut above, a Type 100-L Controller operates a 12" Balanced Valve regulating liquid supply to a large tank. It is pilot actuated for sensitivity. It has operating power to spare — for any size Valve, however large.



Cash Standard Type 10 Pressure Reducing and Regulating Valve — self-contained, pilot operated. For holding reduced pressure within extremely close limits. Sizes: 2" to 12" inclusive. Highest initial pressure 600 lbs.; highest reduced pressure 250 lbs. For use with water, air, Freon, ammonia; or with any non-corrosive gas or oil. Valve operating fluid not wasted; it discharges to outlet pipe. Bodies: iron, bronze, steel. Trims: iron, bronze, stainless steel, monel.

When inquiring specify CP8079 . . . see information request blank, pgs. 2-3

## KOLD-HOLD



### Stratospheres

For accurate testing of aircraft instruments, altimeters, turn and bank indicators, control devices, and gauges of all kinds, use KOLD-HOLD Stratospheres to reproduce at will all required conditions of pressure, temperature and humidity. Cold-liner is of rugged heavy-duty construction. Special guiding arm keeps door always in same plane. Thermopane panel provides visibility. Send now for complete details.

NEW YORK  
CHICAGO

PHILADELPHIA  
LOS ANGELES

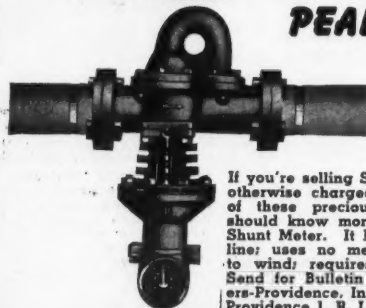
**KOLD-HOLD MANUFACTURING CO.**

434 N. Grand Ave., LANSING, MICH., U. S. A.

When inquiring specify CP8080 — see information request blank, pgs. 2-3



**THE SHUNT STEAM METER  
DOES NOT "CHOP OFF"  
PEAK FLOW**



If you're selling Steam, Air, or Gas, or otherwise charged with the allocation of these precious commodities, you should know more about the Builders Shunt Meter. It bolts directly into the line; uses no mercury; has no clock to wind; requires no power supply. Send for Bulletin 307. Address: Builders-Providence, Inc., 14 Coddling Street, Providence 1, R. I.

**BUILDERS-PROVIDENCE**

When inquiring specify CP8081 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Fine Separation Equipment

Twelve-page-two-color-illustrated-bulletin contains a detailed presentation of the design and operating features of "fine separation" equipment for use with steam lines, boilers, gas lines, chemical process, gas cleaners, evaporators. Brief but practical discussion of the fine separation of liquids from steam, gas, air, vapor emphasizes the removal of small "spot carry over of liquid. Construction of equipment is diagrammatically illustrated and principles indicated. Drawings and specification tables are given for pipe line separators, evaporator, absorption tower separators and drum type. Bulletin 1929 on request.

BLAW-KNOX CO., Dept. CP, Pittsburgh, 30, Pa.

When inquiring specify CP8082 — see information request blank, pgs. 2-3

### Magnetic Pulley Maintenance

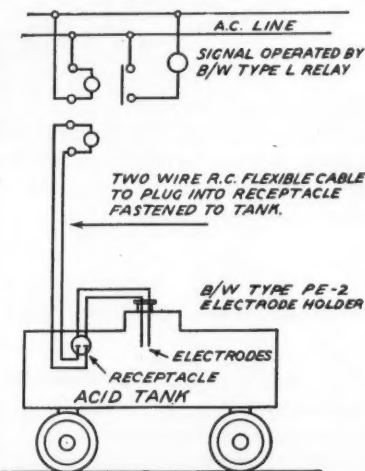
Forty-page-handbook on the operation and maintenance of magnetic pulleys features highly practical information on trouble shooting, trouble prevention, repairs, recommended operating practices and general maintenance. Chapter headings include: Magnetism, Electromagnets; The Magnetic Pulley; Operator's Guide; Trouble Chart; Electric Maintenance; Mechanical Maintenance; Belt and General Maintenance. A discussion of magnetic theory is included as a background for the practical suggestions offered. There are many drawings and diagrams, numerous simple formulae, pulley section table and other data. Although specifically devoted to pulleys, much of the information is applicable to other types of separators. Available on request.

DINGS MAGNETIC SEPARATOR CO., Dept. CP, 509 E. Smith St., Milwaukee, 7, Wis.

When inquiring specify CP8083 — see information request blank, pgs. 2-3

### B/W Floatless High Level Signal (all electric)

for Acid Tanks on Cars or Trucks



In plants where acids are transported from one part of plant to another the arrangement shown here will permit operations to determine when tank is full without exposure to acids or fumes.

The relay can be mounted any distance from the tank and a two wire rubber covered cable with a plug on one end can be plugged into the receptacle permanently fastened to the tank. When acid reaches electrodes the relay will close to sound signal.

Send for twenty-eight page catalog No. 943.



SINCE 1933 — MANUFACTURERS OF  
FLOATLESS LIQUID LEVEL CONTROLS

**B/W CONTROLLER CORPORATION**

(Formerly Bender-Warrick Corporation)

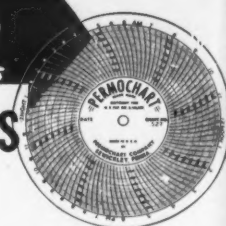
BIRMINGHAM

MICHIGAN

When inquiring specify CP8084 — see information request blank, pgs. 2-3

## Investigate

### PERMOCHARTS



Reusable, recording,  
plastic instrument charts  
that wipe clean with a damp cloth.

● Avoid delays incident to paper shortage and printing by supplementing your supply of paper charts with reusable PERMOCHARTS. Made of Vinylite plastic and available in white and three I-EZ shades—green, ivory, and blue.

● PERMOCHARTS are being accepted as standard circular recording instrument charts by leading Petroleum, Chemical, Food, Public Utility, Iron and Steel industries and other fields. PERMOCHARTS are guaranteed for two years continuous use.

● We also supply high-quality recording ink in three colors—purple, green, and red.

● PERMOCHARTS cost less in the long run—actually about 1/5 as much as paper charts.

PRICE RANGES (F. O. B. Sewickley, Pennsylvania)

Up to 8"—\$1.50 each; up to 10"—\$2.00 each;

up to 12"—\$2.50 each • Ink—2 oz. 70c; 8 oz. \$2.00

Minimum Order—3 Charts

Write for Literature and Quantity Discounts



**PERMOCHART Company**

545 CHESTNUT ROAD

SEWICKLEY PENNSYLVANIA

When inquiring specify CP8085 — see information request blank, pgs. 2-3

*My Business Maintains  
High Accuracy Standards,  
That's Why In Measuring  
Valuable Stored Liquids,  
We Rely On ...*

**LIQUIDOMETER Tank Gauges**  
"THEY'RE ALWAYS DEPENDABLE"



100% automatic—these tank gauges insure accurate, trouble-free readings whenever required. No pumps, valves, or auxiliary units required to read them. Models available so that readings can be taken remotely

from or directly at the tank. Remote reading types utilize balanced hydraulic transmission system which completely compensates for temperature variations on communicating tubing. Accuracy unaffected by specific gravity of tank liquid.

Approved for gauging hazardous liquids by Underwriters' Laboratories and other similar groups. Models available to automatically control pumps, motors, signals or other devices for maintaining minimum or maximum liquid levels.

Write for complete details.

**THE LIQUIDOMETER CORP.**

38-18 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

When inquiring specify CP8086 — see information request blank, pgs. 2-3

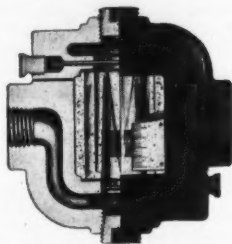
CHEMICAL PREVIEW



## Flow Indicator... new... inexpensive

The float in the new F&P Rota-Sight gives a continuous indication of the true flow rate of gas or liquid passing through it. A novel fluted metering tube gives wide flow range in a short scale length. Sturdy... compact... universal connections... cast in all metals...  $\frac{1}{4}$ " to 6". Available also with alarm attachment.

Send for Bulletin 92-A. Fischer & Porter Company, 4511 County Line Road, Hatboro, Pa.



When inquiring specify CP8087 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Blower Installation & Care Data

Practical suggestions on installation and maintenance of industrial fans and air conditioning equipment is presented in an attractive pocket size booklet featuring numerous instructive illustrations. Practical recommendations on fan foundations, installations, bearings, rotors, drives, couplings, fan balancing, inspection, cleaning, repairing and safety precautions. Specify No. 3426 when requesting copy.

BUFFALO FORGE CO., 490 Broadway, Buffalo, 4, N. Y.

When inquiring specify CP8089  
— see information request blank, pgs. 2-3

### Tube Cleaners and Coupling

Four-page-letter-size bulletin describes a series of tube cleaners embodying improved metallurgy, heat treating and lubrication. Motors have been proportioned so that they can be used to clean both straight and curved tubes. A new coupling is also described, an advance over the short section of rubber hose formerly used, to minimize wear on main supply hose. Coupling provides flexibility to make sharp tube bends and provides unhampered flow of air. Bulletin Y-15 on request.

ELLIOTT CO., Dept. CP, Jeanette, Pa.

When inquiring specify CP8090  
— see information request blank, pgs. 2-3

### Junior Size Shape Cutter

A "junior type cutting machine for quick, easy close tolerance shape cutting is illustrated and described in six-page folder. Designed to handle cutting jobs from smallest up to 3' x 4'. Among many features pictured and described are right angle indexing, convenience of controls, easily interchangeable heads, new design torch holder, finger-tip control manual tracer and simplified methods of making templates. Bulletin on request.

NATIONAL CYLINDER GAS CO., Dept. CP, 205 W. Wacker Drive, Chicago, Ill.

When inquiring specify CP8091  
— see information request blank, pgs. 2-3

### Electrical Specialties

Electrical specialties are offered in a wide selection in an attractive thirty-two page catalog with cover designed for convenient, easy reference filing. Levolver switches in a variety of models, levolver extension arms, pull chain sockets, lamp guards, insulated lamp guards, vapor proof guards, lamp changers are all described and illustrated. Catalog on request.

McGILL MFG. CO., Valparaiso, Ind.

When inquiring specify CP8092  
— see information request blank, pgs. 2-3



## CONTROLLED PROCESSING WITHOUT WASTE J-T COOLERS DRYERS



Jeffrey-Traylor water-sprayed cooler for plastics. Has built-in drip pan and is equipped with nose screen for scalping out foreign materials. Auxiliary units may be easily installed between cooling and drying sections.

In Jeffrey-Traylor (remember the name) drying and cooling systems the rate and depth of material being conveyed is automatically controlled... changed to conform with varying requirements as material travels through various operations. Direct type coolers and dryers furnished with either perforated or louvered conveying surface through which drying or cooling air or gases are passed. Indirect types have solid conveying surface, adaptable for handling fine materials. These units specially valuable for processing under closely-controlled conditions.

Balanced high frequency vibration under absolute control — that's the basis of Jeffrey-Traylor equipment which includes: feeders, screens, conveyors, grizzlies, weighing and proportioning devices, and barrel packers.

Investigate J-T dryers and coolers — if you are handling delicate or sensitive materials — and want positive control over tonnage.



Jeffrey-Traylor indirect dryer employing hot air jackets. Has disintegrating screen interposed between drying sections for elimination of agglomerated lumps. Also direct type dryers with screen or louvered conveying surface.

## The Jeffrey Manufacturing Company

(Established in 1877)

853-99 NORTH FOURTH STREET

Baltimore  
Birmingham  
Boston  
Buffalo  
Chicago

Cincinnati  
Cleveland  
Denver  
Detroit  
Hartford

Houston  
Huntington  
Milwaukee  
New York  
Philadelphia

COLUMBUS 16, OHIO

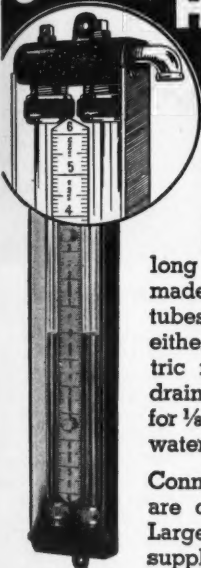
St. Louis  
Pittsburgh  
Salt Lake City  
Scranton

In Canada: Jeffrey Mfg. Co., Ltd., Montreal



When inquiring specify CP8093 — see information request blank, pgs. 2-3

## Connelly EXTRA HEAVY DUTY Manometers



The new Connelly Manometer, Model 3400 — built for extra heavy duty — can be depended upon for accuracy and long life under all conditions. It is made with large bore, clear glass tubes for easier reading, graduated either in inches and tenths or in metric measure. Gland packed, with drain plugs at the bottom and fitted for  $\frac{1}{8}$ " pipe connections. For use with water or special anti-freeze solution.

Connelly Model 3400 Manometers are carried in stock in five sizes. Larger or intermediate sizes can be supplied if desired.

FOR PERMANENT  
MOUNTING

Write today for bulletin and prices.

## CONNELLY

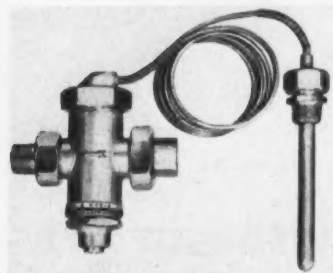
IRON SPONGE &  
GOVERNOR CO.  
CHICAGO, ILL. — ELIZABETH, N. J.

When inquiring specify CP8088 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

Page 47

## Control Liquid Temperatures Within 1 1/2° F. plus or minus



**STERLING  
THERMOTROL**

FOR LIQUIDS AND PROCESSING (No Priority Needed)

AVOID FUEL WASTE, improve production and processing efficiency NOW, with this Sterling THERMOTROL Liquid and Process Control. Self-contained, self-operated, the Thermotrol maintains accurate temperatures on hot water storage tanks, heat exchangers, process cookers, sterilizers — wherever temperatures depend on carefully modulated flow of steam, water, or gas. Available for pressures up to 125 lbs., temperature ranges to 300° F. Available without priority under L-79 Amendment.

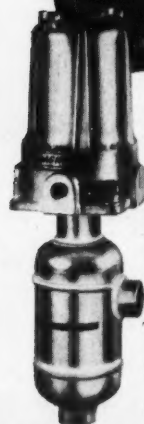
WRITE FOR Bulletin No.  
402 showing wide range  
of applications.

**STERLING, Inc.**  
4015 North Oakland Avenue  
Milwaukee 12, Wisconsin

Manufacturers of Heating Pumps . . . Temperature  
Controls . . . Heating Specialties

When inquiring specify CP8094 — see information request blank, pgs. 2-3

## HOW TO END Liquid Level Control Problems



WITH A **MAGNETROL**

**No Bellows • No Packing Box  
No Diaphragms • No Electrodes**

Because it operates on a simple magnetic principle without mechanical linkage between the float and the switch, the Magnetrol gives dependable, trouble-free control of liquid level. There is nothing in the Magnetrol to break, bind, stick or rupture—only 2 moving parts which are practically maintenance free. Magnetrol engineers will furnish information pertaining to your individual liquid level control problems. Write us today for information.

**MAGNETROL, INC.**

323 W. Huron Street • Chicago 10, Illinois  
A Division of Fred H. Schaub Engineering Co.

**MAGNETROL**  
LIQUID LEVEL CONTROL

When inquiring specify CP8095 — see information request blank, pgs. 2-3

## NEW LITERATURE

### High Vacuum Insulated Containers

Vacuum insulated containers for storing and transporting hot foods and liquids are described in four page bulletin featuring numerous illustrations. Outer and inner shells are made of 20 gauge cold rolled steel. All seams are welded. Outer and inner shells joined at neck by welding making entire body one single unit. The standard food carriers are available in capacities from 12 1/2 to 66 lbs. The complete line includes special assemblies of from two to five food pans and liquid carriers of from 3 to 10 gal. capacity. Hand truck and dolly available for use with larger size units. The manner in which these containers keep material and liquids hot and provide easy transportation and handling has suggested applications in some food processing operations. Literature available on request.

VACUUM CAN CO., Dept. CP, 25 S. Hoyne Ave., Chicago, 12, Ill.

When inquiring specify CP8096 — see information request blank, pgs. 2-3

### Industrial Chilling Equipment

Industrial chilling equipment for shrinking, testing, treating metals is given highly detailed and informative treatment in two-color magazine style publication of twenty-four pages. Operating principles and construction details are explained with emphasis upon the "Cascade" system of heat removal which means two stage refrigeration instead of two stage compression. The several models employing two or three compressors and deep-freeze chilling units are shown in actual use in typical applications. Booklet available upon request.

MOTOR PRODUCTS CORP., Dept. CP, (Deep Freeze Div.), North Chicago, Ill.

When inquiring specify CP8097 — see information request blank, pgs. 2-3

## MIXERS THAT CAN TAKE IT

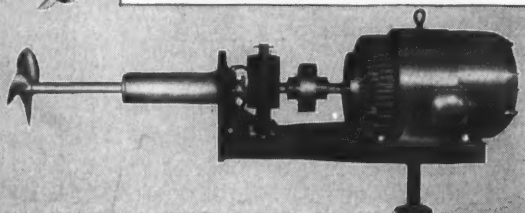


Here's a mixer that will do your job thoroughly and economically under today's punishing production schedules. They're good because they're made by men with the broadest experience in mixer manufacture. Eastern has made mixers for the biggest mixing jobs in the world, and for small laboratory use. Questions of the proper speed, the right propeller assembly, the pitch of the blades, the correct type of mounting, and the number of mixers needed are only a few of the factors which should be fully considered.

So when you have a mixing job to do, be sure to call in one of Eastern's engineers, for this way you'll be sure to get top performance.

**EASTERN ENGINEERING COMPANY**  
49 FOX STREET  
NEW HAVEN 6 - CONNECTICUT

**EASTERN MIXERS**



When inquiring specify CP8098 — see information request blank, pgs. 2-3



**OHMITE Rheostats**

## for smooth, close control of Fractional Horsepower Motors . . .

Ohmite Rheostats are used to control the speed of fractional and integral horsepower motors, in countless applications, because:

- (1) They provide permanently smooth, close, variable speed control.
- (2) They are compact and dependable.
- (3) They have long life. There is nothing to shrink, shift or deteriorate.

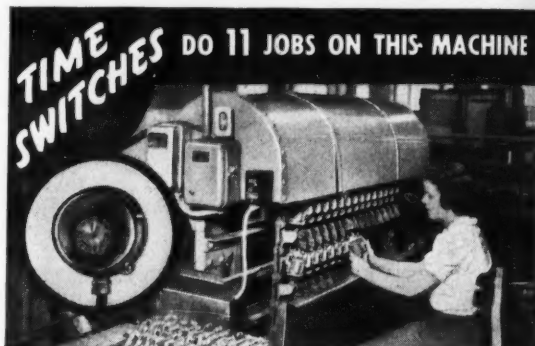
Made in straight or tapered winding, in single or tandem units, to suit each requirement.

Write on company letterhead for Catalog and Engineering Manual No. 40.

**OHMITE MANUFACTURING CO.**  
4917 W. Flournoy St., Chicago 44, U.S.A.



When inquiring specify CP8099 — see information request blank, pgs. 2-3



## They Help the Operator — Increase Production

HERE'S an oven for treating meter coils. Its complex cycle of operations is controlled by G-E timers. They control blowers, agitators, and conveyors. The Type TSA-14, shown in the circle, dips the coils. It raises the tank to immerse the coils, then lowers it for more coils to be placed on the conveyor.

All the operator has to do is to place the coils on the conveyor chain; clock-watching duties are eliminated. She can concentrate on productive work, to increase output.

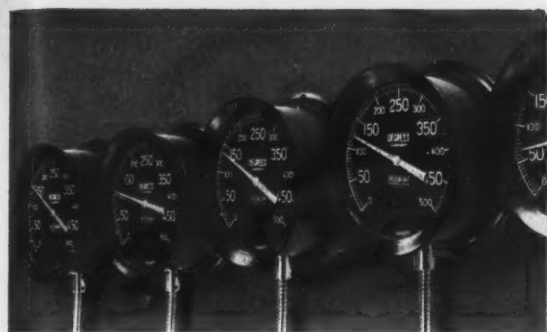
The TSA-14 timer is widely adaptable to equipment such as ovens, pumps, blowers, mixing valves, etc. Bulletin GEA-2963 contains full information—get it from your G-E office or write for a copy to General Electric Company, Schenectady, N. Y.

**GENERAL ELECTRIC**

When inquiring specify CP8100 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW





## They almost **SHOUT** the temperature!

With Foxboro Temperature Indicators on the "hot spots" of your process, temperature readings are made so easy and accessible that they practically can't be overlooked! The instrument can be located in any convenient place up to 200 ft. from the bulb. Airplane-type dials with clear-cut figures give

accurate readings 20 ft. away. Sturdy, precision design. All-metal construction for life-time service without maintenance. Cost no more. Write for Bulletin 148-6. The Foxboro Company, 42 Neponset Ave., Foxboro, Mass., U. S. A. Branches in principal cities of United States and Canada.

**FOXBORO** TEMPERATURE INDICATORS  
Reg. U. S. Pat. Off.

When inquiring specify CP8101 — see information request blank, pgs. 2-3

## Temperature instantly



Know in seconds the temperature of any liquid, oil, grease, plastic. Know how hot your rolls are — what the surface temperature of any mold, flat or curved surface is. The NEW improved portable "Alnor" pyrocon — many instruments in one — gives accurate readings instantly.

### "ALNOR" exclusive features

1. Unusually heavy and rugged movement — highly essential in portable pyrometer.
2. Choice of either rigid or flexible arms or both which are instantly removable and interchangeable.
3. Improved and enlarged assortment of thermocouples instantly interchangeable without change in instrument calibration.
4. Choice of seven standard temperature ranges.
5. Greater accuracy.

### Descriptive Folder on request

**ILLINOIS TESTING LABORATORIES INC.**

Hubbard and LaSalle Sts.

Chicago, Illinois

When inquiring specify CP8102 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

## NEW LITERATURE

### Industrial Hoods of Board Panels, Metals, Alloys

Industrial hoods of asbestos panel boards, sandwich panels boards, sheet metal and special alloys are the subjects of a four page illustrated folder. The applications of the various types are discussed and their advantages emphasized. Some of the typical installations pictured are hoods exhausting from cooling zones of enamel bake ovens, boiler front dust exhaust hoods, exhaust hood to cover drying cylinder and lint exhaust hoods. Bulletin 27 on request.

J. O. ROSS ENG'G CORP., Dept. CP, 350 Madison Ave., New York, N. Y.

When inquiring specify CP8103 — see information request blank, pgs. 2-3

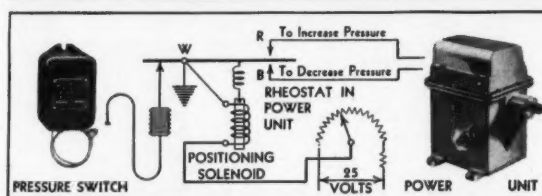
### Metal Cleaning & Finishing Machinery

Thirty-two-page illustrated catalog provides complete information regarding line of metal cleaning and finishing machinery that offers a wide selection to meet specific requirements. In addition to illustrations, diagrams, tables giving specifications and performance data, sections devoted to the various machines also include a helpful and practical discussion of cleaning or finishing procedure and the applications of the machine discussed. This material in addition to a foreword devoted to similar discussion make the book a manual as well as a catalog of metal cleaning equipment. The various sections are devoted to conveyor type machines, cabinet type, monorail and rotary washers, pickling machines, yumbling machines, inclined rotary washers, hot air dryers and ventilators, oil quench tanks and special conveyor wash and rinse machines. Catalog on request.

HOWARD ENG'G & MFG. CO., Dept. CP, 1827 Freeman Ave., Cincinnati, Ohio.

When inquiring specify CP8104 — see information request blank, pgs. 2-3

## BARBER-COLMAN MICRO SYSTEM PRESSURE SWITCH



### GIVES FULL PROPORTIONING CONTROL

THE pressure-sensitive bellows operates a switch to control the power unit. In the power unit a potential dividing rheostat, keyed to the driving shaft, changes the pull of a solenoid until the switch opens when the power unit reaches the desired new position. Extremely accurate control, with elimination of "hunting", is achieved. No current or potential-sensitive relays are required. Maxi-

mum power is available at every point of the stroke. The heavy duty rheostat is enclosed in the motor case with constant pressure on the contact arm to assure dependable operation at all times. The "droop" or proportioning range is variable. This system will provide reliable, accurate, micro-control of pressures uniformly over its full range. Write for Bulletin F1917 giving further details.

**BARBER-COLMAN COMPANY**

1201 ROCK ST. • ROCKFORD • ILLINOIS

When inquiring specify CP8105 — see information request blank, pgs. 2-3

## LIQUIDATION

**FT. WASHINGTON CHEMICAL PLANT  
FT. WASHINGTON, PENNSYLVANIA**

**15 miles from Philadelphia**

**LITHARGE — LEAD FORMATE — LEAD  
NITRATE — SODIUM NITRATE**

2 STOKES 4' x 12' ATMOSPHERIC DRUM DRYERS  
RAYMOND O O MILL; M.D., WITH COLLECTORS  
OLIVER, 4' x 3', ALL IRON FILTER; M.D., COMPLETE WITH  
PUMP

2 BUFFALO, VACUUM, 6' DIA. BOWL, CRYSTALLIZERS;  
JKTD.

GLASS LINED, 3000 GAL., VACUUM STILL  
2 2500 GAL., STEEL, VACUUM STILL; WITH COIL CON-  
DENSERS

2 800 GALLON STILL; JKTD. & AGTD. NITRATORS

2 6' x 13' JKTD. HORIZONTAL BALL MILLS

COMPLETE FORMIC ACID INSTALLATION; INCLUDING  
STILL, LEAD LINED MIXING TANKS

PATTERSON, 5' x 4', PEBBLE MILL; WITH PATTERSON  
MOTOR

SHRIVER, 24" x 24", IRON, OPEN DELIVERY, PLATE AND  
FRAME, WASHING TYPE FILTER PRESS; 24 CHAMBER,  
1"

30 NATIONAL, CARBON, GOULD, LAWRENCE, ACID  
RESISTING AND IRON CENTRIFUGAL PUMPS; 1 1/2" TO  
10"

3 PATTERSON, AGTD. AND JKTD., 500 GAL. KETTLES

5 HORIZONTAL, JKTD. CRYSTALLIZERS; 2'4" x 16" x 3'6"

PROCTOR & SCHWARTZ TRAY DRYER; 15' L, 7' H, 44"

W, COMPLETE WITH 400 ENAMELED TRAYS 16" x 20"

HYDRAULIC PRESS; DOWNWARD MOVING RAM, PLAT-

ENS 5' x 5'; 20" RAM; 60" DAYLIGHT-4" RODS

PROCTOR DRYER, CONTINUOUS TYPE, 9 1/2' W x 36' L x

8'3" H

NITRATE DRYER; 20' L, 7' H, 7' W (TRUCK DRYER COM-  
plete with 13 TRUCKS)

### MISCELLANEOUS

1000' SCREW BUCKET & ROLLER CONVEYOR; 6" — 14",  
30 TON, PIPE VALVES & FITTINGS 1" TO 10" SIZE —  
MOTORS, STARTERS, BELTING, 20 TONS PIPE, 5000 BOTH  
NEW & USED VALVES, ELECTRIC HOISTS, PLATFORM  
SCALES, NIPPLES, BUSHINGS, FLANGES, HOSE BOWLS,  
B. X. CABLE CONDUIT, SWITCHES, WIRE CABLE, TEES,  
ELLS, 5 TONS OF PULLEYS, SHAFING, HANGERS &  
BEARINGS, TRUCKS, FIRE BUCKETS, REFRACTORY  
BRICK, ACID BRICK.

our representative will meet you by appointment  
at the plant.

### PLASTIC \* RUBBER EQUIPMENT

3 THROPP, 36", 42", 50" RUBBER MILLS; M. D.

3 ROYLE TUBERS; NO. 1, 3, 4, ALL MOTOR DRIVEN

WATSON STILLMAN, 24" x 24", MULTIPLE PLATEN PRESS,  
16" RAM

3 HYDRAULIC PRESSES; 17" RAM, 6'6" STROKE, WITH  
PUMPS

GUILLOTINE HYDRAULIC CUTTER

You are cordially invited to attend  
at our plant

**F.M.C. EXHIBIT**

New and Rebuilt Equipment  
Dec. 6-11, 1943

**FIRST  
MACHINERY CORP.**

EAST NINTH STREET & EAST RIVER DRIVE  
NEW YORK 9, N. Y.

When inquiring specify CP8106 — see information request blank, pgs. 2-3



From an arsenal of fire fighters including such famous names as Fire Guard, Alaskan, and Floa-fome, General Detroit gives you C-D/Fog.

Newest of carbon dioxide extinguishers, C-D/Fog snuffs out fire by enclosing it in an icy grip. Air cannot reach the flame.

C-D/Fog leaves no stain. It is safe to use on electrical, oil, and gasoline fires. It is equally efficient in hot or sub-zero weathers.

General Detroit's known record in quality mass production assures you prompt delivery for all essential needs.

"Fire Protection is Victory Effort"

**THE GENERAL DETROIT CORP.**

Former Name THE GENERAL FIRE TRUCK CORP.

New York • DETROIT • Chicago

West Coast Affiliate: THE GENERAL PACIFIC CORP.,  
SEATTLE • LOS ANGELES • SAN FRANCISCO

Distributors in All Principal Cities

THE GENERAL DETROIT CORP.  
2220 East Jefferson Ave., Detroit, Mich.  
Please rush details on C-D/Fog and others in  
your complete line of fire extinguishers.

**GENERAL  
DETROIT**

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

Tear out this simplified coupon and attach  
to your letterhead.

When inquiring specify CP8107 — see information request blank, pgs. 2-3

## NEW LITERATURE

### Safety Puller for Cartridge Fuses

A safety-grip fuse puller to provide maximum safety in handling "hot" fuses is described in illustrating bulletin. The puller has notched edges on both sides to fit the fingers and the fibre material has a natural non-slip surface. It is also useful in handling various "live" electrical parts. Four sizes are listed. Bulletin on request.

IDEAL COMMUTATOR DRESSER CO., Dept. CP, 1288 Park Ave., Sycamore, Ill.

When inquiring specify CP8108 — see information request blank, pgs. 2-3

### Pumps and Their Part in War Pictured in Graphic Style in Special Bulletin

An elaborate de-luxe size (14 x 11 ins.) bulletin features an authentic pictorial presentation of the important and effective part modern pumps are playing in war operations both in production and actual combat duty. Typical of the many services described and pictured are the use of turbine pumps for direct fueling of fighter planes, bombers and tanks, for transferring gas and oil to tankers and destroyers; use of submersible bilge pumps on battleships and carriers as well as the use of pumps in a variety of difficult construction and engineering jobs. Action photos of activities in the various armed services all over the world, scenes of operations in raising ships sunk at Pearl Harbor, amphibian tanks are typical. Amphibian tanks which this organization is manufacturing are strikingly pictured in a large photo on the inside cover.

PEERLESS PUMP DIV., Dept. CP, 301 W. Ave., 26, Los Angeles, 31, Cal.

When inquiring specify CP8109 — see information request blank, pgs. 2-3

### WHAT CAPACITORS DID FOR THE GATE CITY IRON WORKS

THE Gate City Iron Works, Omaha, Neb., needed additional capacity for greatly increased welding operations. They used capacitors to improve power factor. Three 240-kva units did the job. Results:

Saved critical material, time, labor, money—by eliminating need for expensive rewiring.

Reduced kva load demand of plant's electric system more than one-third. Improved voltage conditions throughout entire plant; reduced load on feeders.

Reduced the power cost.

Made possible greater production.

### THEY CAN DO FOR YOU

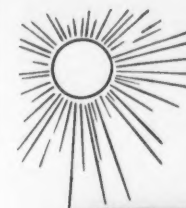
If your plant's power system is fully loaded—or overloaded—and the power factor is low, capacitors can help. They supply reactive kva that otherwise loads up transformers and feeders. Thus plant wiring can carry as much as 40% more working current.

They're readily available. You get results in a hurry.

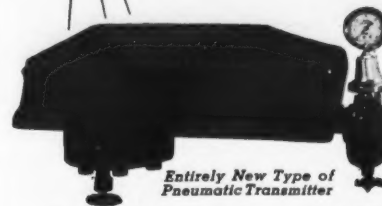
Write for Catalog GEA-77. General Electric Company, Schenectady, N. Y.

**GENERAL ELECTRIC**

When inquiring specify CP8110 — see information request blank, pgs. 2-3



## Something New Under the Sun



REPUBLIC  
PNEUMATIC FLOW  
AND LEVEL  
TRANSMITTER

Operates Like a  
Weigh-Beam

Entirely New Type of  
Pneumatic Transmitter

### Thorough 2 Years Field Test Proves:

- **Speed** . . . . . Follows flow changes almost instantaneously. With 500' 1/2" O. D. tubing, change registers in 15 seconds.
- **Accuracy** . . . . . Transmitting pressure vs measured differential guaranteed within 1/2 of 1% meter range.
- **Sensitivity** . . . . . Hysteresis loop less than 1/20 of 1%.
- **Lower Maintenance** . . . . . No mercury needed. Thus installations are simplified and maintenance cost reduced. All standard parts. No special tools.
- **Old Hazards Eliminated** . . . . . No need to pipe inflammable—poisonous—explosive fluids to control room.
- **For Light or Heavy Oils** . . . . . No seal liquid. No need to heat seal pots and connecting lines.

Unaffected by Temperature or Vibration  
Write for Bulletin No. 43-4

**REPUBLIC FLOW METERS CO.**  
2244 Diversey Parkway Chicago, Illinois

When inquiring specify CP8111 — see information request blank, pgs. 2-3

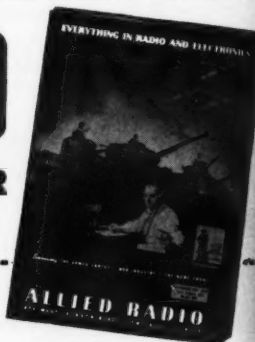
**10,000  
ITEMS UNDER  
ONE ROOF!**

ONE QUICK, CENTRAL  
SOURCE FOR EVERYTHING  
IN ELECTRONICS AND RADIO

The world's largest stocks are centralized in this arsenal of supply. Over 10,000 items . . . for laboratory, production, maintenance, training, combat. That means quick delivery on vital needs for the Armed Forces, Government, Industry. Our procurement experts, with latest "supply data" on all leading products, simplify and expedite all your purchases. Whatever you need in electronics and radio . . . save time—call Allied first. Thousands do.

Write, Wire or Phone Haymarket 6800

**ALLIED RADIO CORP.**  
833 W. Jackson, Dept. 17-L-3, Chicago 7



**FREE!**

Most complete, up-to-date  
BUYING GUIDE!

OVER 10,000  
WARTIME ITEMS

Condensers Sockets  
Transformers Test Equip.  
Resistors Power Supplies  
Relays Converters  
Rheostats Public Address  
Switches Intercom  
Rectifiers Photo Cells  
Tubes Coils  
Wire & Cable Tools  
Batteries Receivers

**ALLIED RADIO** *Delivers the Goods*

When inquiring specify CP8112 — see information request blank, pgs. 2-3

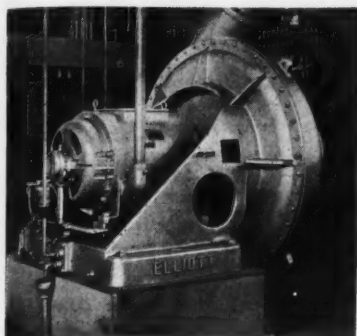


## Blow air, move gases with ELLIOTT CENTRIFUGAL BLOWERS

From small, compact, high-speed single-stage centrifugal blowers to large multi-stage units, Elliott Blowers fit into a large field of applications in the chemical and process industries. Capacities: 200 c.f.m.

up; pressures: 1.5 to 100 lb. gage.

Elliott designs and builds the blower; the driver, whether turbine or motor; speed-increasing gears, where required; condenser for the turbine, etc.



CONSULT AN  
ELLIOTT  
ENGINEER  
SALESMAN...

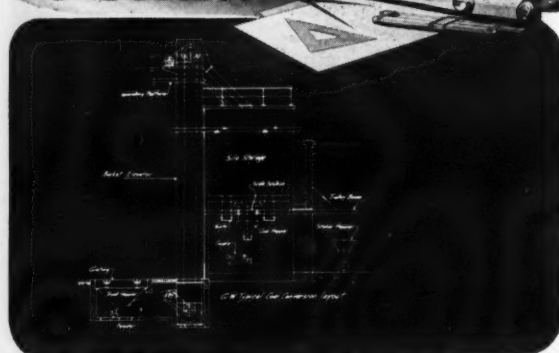
He may have a valuable application idea which you can use without obligation.

P-1053

**ELLIOTT COMPANY**  
Centrifugal Blower Dept., JEANNETTE, PA.  
DISTRICT OFFICES IN PRINCIPAL CITIES

When inquiring specify CP8113 — see information request blank, pgs. 2-3

## FOR FAST CONVERSION TO COAL...



## LET G-W HANDLE THE DETAILS

Getting a coal and ash handling system needn't tie up your busy engineers. If they haven't time to design a complete conversion job, Gifford-Wood will submit a dependable standard design, adapt it

to your needs, produce and install the equipment promptly. You'll be proof against fuel oil shortage with an efficient, long-lasting, guaranteed installation. As a first step, write for the latest G-W catalog, "C".

**GIFFORD-WOOD CO.**

Founded 1814

420 Lexington Ave.  
New York

565 Washington Street  
Chicago

4650

When inquiring specify CP8114 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

## NEW LITERATURE

### Spray Painting Operating Chart

Twenty-one practical rules for efficient spray painting are listed on a handy wall chart. The data is so arranged that operators may quickly find rules pertaining to any of the following economies or advantages: paint, air, time, power or fuel savings; accident, sickness prevention; longer equipment life; more uniform results. Chart No. 811 on request.

ECLIPSE AIR BRUSH CO., INC., Dept. CP, 390 Park Ave., Newark, N. J.

When inquiring specify CP8115  
— see information request blank, pgs. 2-3

### Roof Maintenance

The various causes of roof damage are discussed in interesting and practical detail in an attractive eight-page-two-color folder. The importance of combating roof damage as soon as any evidence appears is emphasized. Many of the more common tell-tale signs are mentioned and the proper procedures, materials and methods for specific difficulties are clearly explained. Illustrations not only highlight important points but emphasize the widely varying requirements of various types of roofs.

UPCO CO., Dept. CP, 4796 Lexington Ave., Cleveland, Ohio.

When inquiring specify CP8116  
— see information request blank, pgs. 2-3

### Faucet & Valve Repair Kit

Four page bulletin describes renewable seats and re-seating tools for valves, faucets, bibbs. The bulletin illustrates and describes in detail the large industrial kit designed especially for maintenance work in large factories. For nine renewable seat sizes and seven bushing sizes it contains four fluted centering guides, eleven drill tap sizes, facing tools, seat keys, ratchet wrench etc. Data on washers, stems, sleeves and centering and drilling jig are included in the bulletin which is available on request.

ECONOMY VALVE SEAT CO., Dept. CP, 2617 Fletcher St., Chicago, Ill.

When inquiring specify CP8117  
— see information request blank, pgs. 2-3

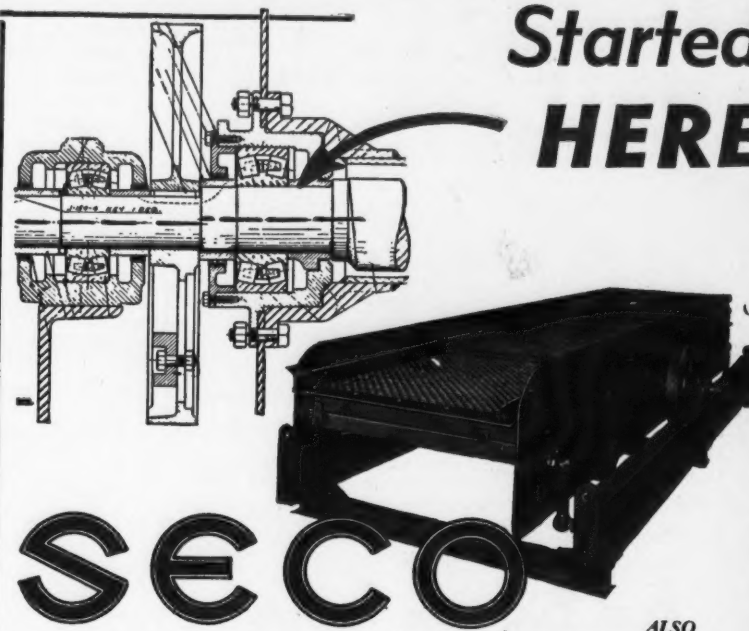
### 4-Purpose Automotive Detergent

Pocket size-twelve page booklet describes properties and applications of material designed for multi-purpose service in automotive maintenance. Four principal uses cited as floor cleaner and conditioner, truck cooling system cleaner and descaler, parts degreaser and steam cleaning detergent. Booklet available on request. Specify "Oakite Penetrant."

OAKITE PRODUCTS, INC., Dept. CP, 27A Thames St., New York, N. Y.

When inquiring specify CP8118  
— see information request blank, pgs. 2-3

# Gyratory Motion Started HERE



## SECO Vibrating Screens

ALSO  
MULTIPLE DECK

The SECO patented control feature eliminates the necessity of resilient supports which dampen the action of a gyrating body. The resultant SHARPER ACTION of the SECO goes a long way toward the elimination of blinding. This improves actual sizing and capacity.

Furthermore — the controlled motion of SECO gives an excellent conveying action so that if desired the screen will operate at less slope than most inclined screens. A SECO will do close sizing.

Investigate the "Control of Motion" built into all SECO Screens — giving quiet and smooth operation together with its higher efficiency. Every square inch of screening surface moves in exactly the same plane. It has to.

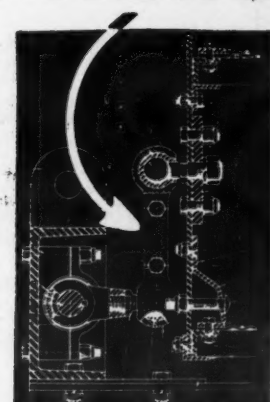
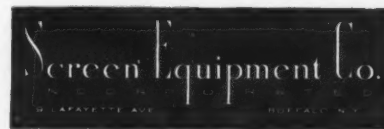
## Is Controlled HERE

Send for the  
descriptive book

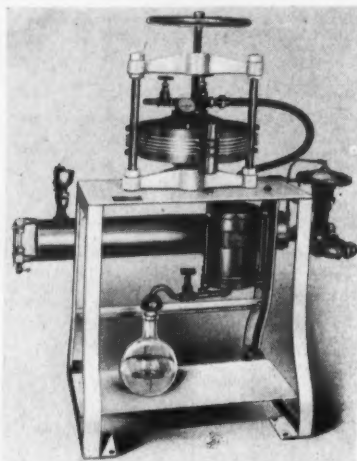
on SECO VIBRATING SCREENS, giving

full mechanical details and complete in-

stallation dimensions.



When inquiring specify CP8119 — see information request blank, pgs. 2-3



**PYROGEN  
RETENTIVE  
INFUSION  
FLUID  
FILTERS  
!**

ERTEL ENGINEERS present the newest development in this field.

Based on exhaustive research in collaboration with an outstanding scientific research group, the **ERTEL INFUSION FILTER** is the ultimate answer to this important phase of intravenous therapy.

*(Annals of Surgery, Co Tui M.D., and A. M. Wright M.D., September, 1942)*

**ERTEL ENGINEERING CORPORATION**

EXECUTIVE OFFICES AND FACTORY AT  
KINGSTON, N. Y.  
NEW YORK SALES OFFICE AND SHOWROOM  
40 WEST 48th STREET

When inquiring specify CP8120 — see information request blank, pgs. 2-3

**BUTADIENE  
STYRENE  
HIGH-OCTANE  
ALCOHOL  
Plants Use**



**SPRACO NOZZLES  
for SCRUBBING GASES**

Spraco Center-Jet and T-Type nozzles for scrubbing gases are made in a wide range of sizes and capacities in stainless steel, cold rolled steel, brass, bronze or any specified machinable alloy. We suggest that you consult our engineering department in planning nozzle installations for scrubbing gases in new plants.

Write to

**SPRAY ENGINEERING CO.**

113 CENTRAL ST.

SOMERVILLE, MASS.



When inquiring specify CP8121 — see information request blank, pgs. 2-3

**NEW LITERATURE**

**Snap-Action Midget Switches**

Loose-leaf, file-size catalog illustrates and describes complete line of snap-action midget switches for various applications. It presents engineering data on construction embodying the rolling spring principle. Ten different types are shown, complete with ratings and blueprint drawings. Included in this selection is a switch weighing less than one ounce and less than one and one half inch long with standard rating and standard gap.

ARCO ELECTRIC CO., Dept. CP, 1343 Superior Ave., Cleveland, Ohio.

When inquiring specify CP8122 — see information request blank, pgs. 2-3

**Self-Contained Electric Car Spotters  
for Loading & Handling Operations**

Attractive illustrated booklet of sixteen-pages is devoted to a practical presentation of self-contained electric car spotters. It covers vertical capstan units of 5000 and 10,000 pound starting pull capacity, for mounting on a stationary foundation or equipped with portable frame for convenient transfer from one location to another. The electric motor can be integrally mounted on car spotter or connected by flexible coupling and compactly mounted on a welded steel base common to motor and spotter. Other uses enumerated and illustrated are pulling piles of lumber into and out of kilns; moving kier cars in textile mill, warping vessels along docks; serving car hearth furnaces and dragging heavy loads. Copy of this booklet Number 1992 is available upon request from the manufacturer.

LINK BELT CO., Dept. CP, 307 N. Michigan, Chicago, Ill.

When inquiring specify CP8123 — see information request blank, pgs. 2-3



**Chemical Handling**

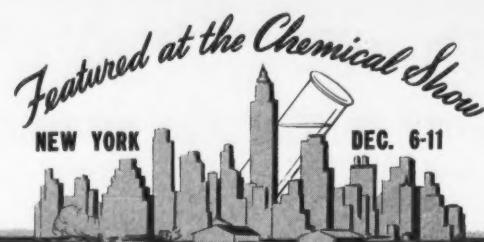
1. Deep penetration, 2. Capacity loading and 3. Rapid, complete discharge; are essential performance features common to all Owen rehandling buckets.

Regardless of your job requirements, it will pay you to investigate the OWEN line which offers buckets for all kinds of work and the proper bucket for your particular work. Write NOW.

**The OWEN BUCKET Company**  
7050 Breakwater Avenue • Cleveland, Ohio  
BRANCHES: NEW YORK PHILADELPHIA CHICAGO BERKELEY, CAL.



When inquiring specify CP8124 — see information request blank, pgs. 2-3



**VISIT BOOTH 414**

**KINNEY  
DRY VACUUM PUMPS**

While at the 19th Exposition of Chemical Industries in Madison Square Garden, see the KINNEY High Vacuum Pumps now widely used in the production of magnesium, the sintering of tantalum and in many other fields vital to the Nation's war effort. KINNEY Dry Vacuum Pumps, both Single Stage and Compound, will be on display at Booth No. 414 — the Compound pump will be in operation.

Be sure to visit us at the Kinney booth and let's discuss your vacuum problems.

We also manufacture liquid pumps — plain pattern and steam jacketed, strainers, clutches and cut-off couplings.

Descriptive Bulletin 18 on request.

**KINNEY MANUFACTURING COMPANY**

3573 Washington St., Jamaica Plain, Boston, Mass.

Branch Offices:  
New York, Chicago, Los Angeles, Seattle, Philadelphia, San Francisco

When inquiring specify CP8125 — see information request blank, pgs. 2-3

*Tomorrow Too!*

**CLARK  
FORK TRUCKS**  
will Serve Industry  
and Save Manpower  
in Material Handling



**BUY  
MORE  
BONDS**

**CLARK TRUCTRATOR**

DIVISION OF CLARK EQUIPMENT COMPANY  
BATTLE CREEK, MICHIGAN, U.S.A.

When inquiring specify CP8126 — see information request blank, pgs. 2-3



# HERE'S THE SOLUTION

## TO THE SCALE IN TUBES PROBLEM

There's no need to tolerate inefficiency due to scale and foreign deposits in tubes. Airtool Tube Cleaners — the cleaners with the power seal motor that gives greater power and with special heat-treated alloy steel non-tracking cutter heads — will remove deposits quickly and thoroughly without damage to tubes. Sizes 1/2" to 20" I.D.; air, steam or water driven, for straight or bent tubes. A wide selection of cutter, brush, drill or knocker heads available.

### Airetool Tube Expanders

Precision made, long-lasting Airetool Tube Expanders are offered for all sizes and types of tubes.

Write for Airetool Tube Cleaner and Tube Expander Bulletins

**AIRETOOL** MANUFACTURING COMPANY

500 Shuey Bldg., Springfield, Ohio



When inquiring specify CP8127 — see information request blank, pgs. 2-3

## Wherever Carbide Tools are used DI-MET DIAMOND ABRASIVE WHEELS Keep them cutting at their best!

Made in all standard types through 6" in diameter in diamond concentrations and grit sizes suited to your individual needs.



FELKER MANUFACTURING CO., 1129 BORDER AVE., TORRANCE, CALIF.

MANUFACTURERS OF DIAMOND ABRASIVE WHEELS

When inquiring specify CP8128 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

## NEW LITERATURE

### Heavy Duty Turret Lathes

Catalog on heavy-duty turret lathes contains information on standard heavy duty types as well as fixed bed and sliding bed turret lathes. The various subject headings include: speed selection, motor drive, control and starter, headstock transmission, cross slide carriage, chucks, bar feed attachment and tool sets. Illustrated is 17 1/4 inch diameter spindle bore — large enough to permit a man to crawl through it. Catalog on request.

INTERNATIONAL MACHINE TOOL CORP., (Libby Div.)  
Dept. CP, Indianapolis, Ind.

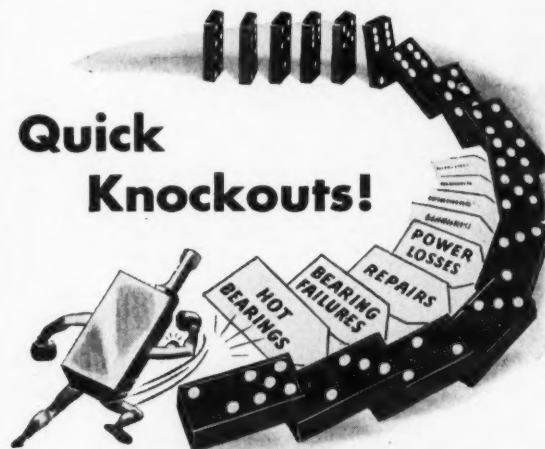
When inquiring specify CP8129 — see information request blank, pgs. 2-3

### 1000 Assembled Industrial Truck Combinations Meet Practically All Floor Truck Requirements

Combination assembled trucks comprising an unusually wide selection of truck chassis and superstructures to fit them and some eighteen different casters in wide variety of sizes are all illustrated and described in practical detail in a handsome sixty-four page general catalog. The truck selection offers a choice 1000 truck combinations. The catalog contains over 500 illustrations showing the features and applications of many of these combinations, construction and engineering features of many of the chassis and design details of casters. Much of the material provides information that is of great value in planning and carrying out material handling operations. Copy of this new catalog is available upon request.

THOMAS TRUCK & CASTER CO., Dept. CP, Mississippi River & K St., Keokuk, Iowa.

When inquiring specify CP8130 — see information request blank, pgs. 2-3



IN fast succession, Farval flattens out your main obstacles to top production—for with the Farval Centralized System of Lubrication every bearing gets exactly the amount of lubricant it requires at all times.

Thus Farval protects you in advance against shut-downs due to faulty lubrication—keeps your overloaded machines in full production on 24-hour schedules, and continues earning throughout the life of the machines. Hadn't you better investigate Farval?

The Farval Corporation, 3257 E. 80th St., Cleveland, Ohio.

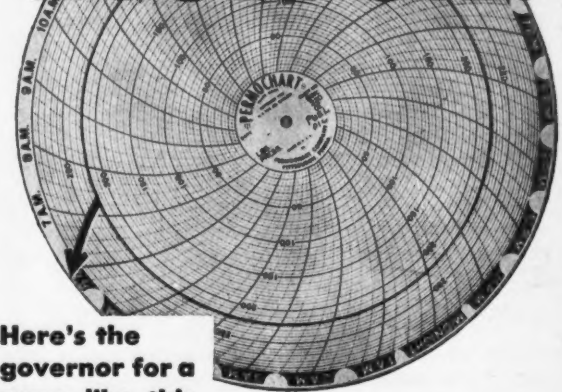
Affiliate of The Cleveland Worm & Gear Company,  
Automotive and Industrial Worm Gearing.

IN CANADA: Peacock Brothers Limited

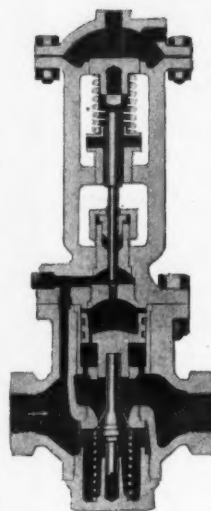
**FARVAL** CENTRALIZED SYSTEMS OF LUBRICATION

When inquiring specify CP8131 — see information request blank, pgs. 2-3

## How're You Doing on FUEL OIL?



Here's the governor for a curve like this



Foster Type 38-P6 Diaphragm type, Auxiliary operated Pump Governor for constant pressure service. This type of governor operates on initial pressures up to 400 lbs. at 750°F, for discharge pressure up to 800 lbs. Full details on this and other governors in Catalog 70.



When you are making adjustments to squeeze the last b.t.u. out of your fuel oil allotment, you need constant fuel oil pressure to start with. And fuel oil pressure is one variable you can easily eliminate.

The chart shows a 24-hour cross section of the close regulation you can expect from a Foster Type 38-P6 Pump Governor, day in, day out—year after year.

This particular governor has been giving satisfactory, trouble-free regulation for 9 years because it is the right size and type for the job, and it was properly installed.

There is a Foster Automatic Valve for every service requirement. When you are faced with a pressure problem or temperature problem of any kind, why not select the proper size and type from a complete line where you are not limited in your choice? Our engineers will be glad to help you find the right answer to your problem.

Illustrated catalog on the complete Foster line, with many pages of useful engineering data will be sent if the request is made on company letterhead. Simply ask for Catalog 70.

**FOSTER ENGINEERING**  
124 MONROE STREET • NEWARK, N. J. *Company*

When inquiring specify CP8132 — see information request blank, pgs. 2-3

### Electronic Heaters for Heating Metals

Electronic heaters for heating metals are illustrated and described in an eight page bulletin. The electronic method of heating metals is discussed and its simplicity emphasized. Detailed specifications of both 5-kw and the 15-kw, — 550 kilocycle heaters are given. Also included in the bulletin are illustrations of the many important small parts which may be brazed, soldered or surface hardened by electronic heating.

GENERAL ELECTRIC CO., Dept. CP, Schenectady, N. Y.

When inquiring specify CP8133 — see information request blank, pgs. 2-3

### Accident Facts Memos

A new list of accident fact memorandums has recently been made available. They summarize detailed accident reports by thousands of industrial plants all over the country. The memorandum in each case reports the principle causes, prevailing conditions and other factors involved in the cause of the particular type of accident discussed. The list is available upon request and from it may be ordered such memorandums as may be of interest. Typical subjects covered include ladder accidents, hoisting and platform accidents, electrical accidents and numerous hazards in various industries such as paper, and metal working plants.

NATIONAL SAFETY COUNCIL, Dept. CP, 20 North Wacker Drive, Chicago, 6, Ill.

When inquiring specify CP8134 — see information request blank, pgs. 2-3

### Fluorescent Fixture Designed for Service

#### When Excessive Vibration is A Factor

Two page bulletin describes a fluorescent lighting fixture especially designed to provide unusual resistance to shock, vibration and oscillation. Its numerous features of design are discussed in great detail. A few of them are: Uses two fifteen watt fluorescent lamps; ballast, lampholders, starter sockets and special terminal block can be removed from housing as a complete unit without dismantling the fixture from the ceiling or from the mounting brackets. Well diffused illumination afforded by shield used. Effective lamp concealed eliminates objectionable brightness from normal viewing angles. The reflector is chrome plated steel, Diffusing cover is of "louverplas", unit housing and mounting straps of steel. Lampholders plastic. The housing has a rust-resisting plated coat, one coat of zinc chromate primer and one coat gray enamel. Interior is finished in white enamel. Length is 18 $\frac{7}{8}$  inches, depth 5 $\frac{1}{4}$  inches, width 6 $\frac{1}{8}$  inches, mounting brackets are 7 $\frac{1}{2}$  inches deep. Although originally designed for use aboard ships this unit offers features that make it especially adaptable to numerous industrial uses where vibration is a great factor. Bulletin 2139 is available upon request.

CURTIS LIGHTING, INC., Dept. CP, 6135 W. 65th St., Chicago 38, Ill.

When inquiring specify CP8135 — see information request blank, pgs. 2-3

# KING OF THE



## A. T. and M.

Link Suspended A T & M Smooth operation with "out of balance" loads. An A T & M-designed link guarantees absolute minimum of foundation vibration. Fume-tight covers; spray pipes; specials.



Suspended A T & M For heavy chemical service. Self-discharging baskets, Twin-Speed Regenerative Drive for entire batteries, positive control — and all other accessories when specified. Laboratory units.



Base Bearing A T & M Motors built to A T & M's own specifications. Removable baskets, if desired. Cover cannot open while centrifugal in use. Easily accessible brakes. Outer casing of solid iron or steel.





# WHIRL

## YOU CAN GET THE MOST FROM CENTRIFUGAL FORCE... INCREASE PRODUCTION, SAVE TIME AND FLOOR SPACE... WITH A T & M

"Whirl is King," said the Greek philosopher, 3000 years ago — words still true today wherever centrifugals are in action.

Too often, however, the full benefits of centrifuging are lost without the engineering skill that is "King of the Whirl".

For instance, in one case the power factor seemed out of line with production. AT&M engineers cut this manufacturer's filtration time in half . . . saved power, too . . . when they found he was running his centrifugals too fast for best results. Four hundred times gravity, *rightly engineered*, did more than eight hundred could do.

In hundreds of other cases, special designs and recommendations from AT&M engineers have enabled men like yourself to get more from their centrifugals than they previously thought possible, save chemicals, cut production time and make better use of available floor space.

Today, though our engineers and facilities are heavily pledged to war production, we will welcome the opportunity to place our experience at your disposal for future planning, as national needs permit. Write us. We keep strict confidence. Address 1425 Hyde Park Ave., Boston, Mass., or 30D Church St., N. Y.

## AT & M Centrifugals in all machinable metals and coatings Save Time and Space

When inquiring specify CP8136 . . . see information request blank, pgs. 2-3

## AT & M's 3-War Veterans

### Pattern-Maker, 1875 to 1943

Ed Radford, age 87, who has worked continuously with A T & M since 1875, is one of our veterans from three of America's wars. Foreman of the pattern shop for 45 years, he works to measurements of 1/64th-inch, without glasses. His "kid brother", only 82, is a machinist in a nearby plant. Their father was once President of AT & M.



### Back after 48 Years



Jim Powers, age 72, started at A T & M 51 years ago. After 48 years in woodworking, carpentry, textile machinery manufacture, he came back to A T & M last year, putting his experience at drilling and general machine work once again into war production.

### He Remembers the Gas Lights

Pat Brown, plant electrical engineer, is 74. When he began work with A T & M 50 years ago, the plant was lighted with gas. Pioneering at the very beginning of the electrical age, from 1910 to 1913 he and a Harvard professor developed electrical controls for A T & M centrifugals — used in both World Wars to manufacture smokeless powder.



### Answers "Call to the Colors"



Another of A T & M's 3-war veterans, Joseph Groves, decided to retire in 1930 after 38 years with a box machinery company. He was then 61 years old. Today, at 74, he brings his first-class machinist's skill to A T & M, where once again he is on industry's firing line.

## NEW LITERATURE

### Turret Lathes for Small Chucking and Bar Work Requiring Close Tolerances; for Second Operations

Two series of turret lathes are completely described and illustrated in twelve page catalog. They are designed for high speed machining and small chucking and bar work requiring close tolerances and are especially adapted to second operations. The series 900 and 1000 turret lathes respectively have 9 1/4 and 10 1/8 inch swings over the beds and saddle wings and 1/2 inch and 1 inch maximum collet capacities. The standard equipment for these lathes includes handlever turret, handlever cross slide, compound cross slide, universal carriage, quick change gear box and coolant equipment. All specifications, dimensions, capacities, Catalog Number 901 on request.

SOUTH BEND LATHE WORKS, South Bend, Ind. speeds and feeds are tabulated for easy reference.

When inquiring specify CP8137 — see information request blank, pgs. 2-3

### Chart Shows How to Identify Welded Heat Exchanger and Condenser Tubing

In order to avoid the installation in heat transfer apparatus of any welded tubing which has not been specifically manufactured and tested for this application, the welding tubing manufacturers who make tubing for this purpose mark each length of welded tubing that is produced for this use with a suitable symbol. Each manufacturer has an individual symbol to use in this way for identification of the product. A chart has been prepared showing the symbols of all companies who manufacture welded steel tubing for heat transfer and who are reported as having adopted this procedure. Copies of this chart are available upon request.

FORMED STEEL TUBE INSTITUTE, Dept. CP, 1621 Euclid Ave., Cleveland, Ohio.

When inquiring specify CP8138 — see information request blank, pgs. 2-3

### 6000 Pound Truck & Crane Unit

Four page booklet describes a 6000 pound capacity low elevating platform truck combined with a 2000 capacity twin unit crane providing a two-in-one materials handling unit that features great flexibility in materials handling operations. Photo of full page size uses captions and arrows pointing to various parts to emphasize simplicity, convenience and heavy duty capacity of this unit. Detailed drawings and complete tables of engineering data are also presented. Cable winch unit supplies the hoisting and booming power and both can be operated simultaneously through separate push button type crane and hoist controls. Separate, independent motors and power units drive the truck for travel as well as for hoist and boom loads. Full information on this electric industrial truck are given in this bulletin (2920) available on request.

YALE & TOWNE MFG. CO., (Philadelphia Div.) Philadelphia, Pa.

When inquiring specify CP8139 — see information request blank, pgs. 2-3

Where Space is

**LIMITED**

# USE GAST *Integral* ROTARY COMPRESSORS

On machines where space for the compressor is limited, the problem is solved by using these Gast Integral Rotary Compressors—the most compactly built units on the market. Compactness and light weight are obtained by making the compressor an integral part of the driving motor. This integral design also affords two extra advantages:—additional economy because there is no need to buy a separate mounting base or driving mechanism—and unusual smoothness due to the utilization of the heavy motor frame as a mounting base. These units embody all of the other superior performance features of Gast units such as the Gast Rotary Design, Self-Adjusting Shaft Seal, and Automatic Take-Up that compensates for wear.

## SEND FOR NEW CATALOG

Containing complete descriptions, specifications, engineering data and performance tables for all Gast Vacuum Pumps as well as Compressors.

### GAST MFG. CORPORATION

101 Hinkley St., Benton Harbor, Michigan

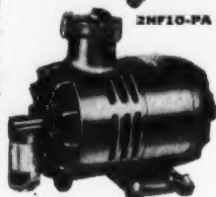
**GAST**  
ROTARY AIR  
PUMPS

COMPLETE  
LINE  
INCLUDES

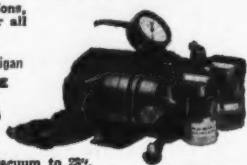
12 sizes Air  
Pumps 1/2 to  
22 c.f.m., Vacuum to 22",  
Pressures up to 30 lbs.



2HF10-PA



3F20-PA



5F5-PA

When inquiring specify CP8140 — see information request blank, pgs. 2-3

## CONSTANT AIR PRESSURE FOR YOUR FURNACES

Send  
for  
Catalog

Thousands of furnace users have found from experience that Billmyre Turbo Blowers assure the constant pressure with varying capacity, and the reliable, accurate combustion control necessary for successful heating operations. Investigate these efficient, reliable, trouble-free blowers for your furnaces, ovens, forges or kilns.

**ALLEN BILLMYRE CORP.**

445 Fayette Av., Mamaroneck, N.Y.

**ALLEN BILLMYRE**  
AIR AND GAS BLOWERS

When inquiring specify CP8141 — see information request blank, pgs. 2-3

# Equipment for Production

## Centrifugal Pump Impeller For Finely Divided Erosive Solids

*Designed for maximum hydraulic efficiency and  
high velocities; narrow ports, no sharp angles*



MULTI-VANE IMPELLER

**Uses** — Multi-vane impeller designed for handling finely divided solids or acids which are erosive or corrosive rather than abrasive is recent addition to selection of impellers offered by maker of centrifugal pumps.

**Features** — Hydraulic efficiency is increased by the reduction of skin friction and proper hydraulic relation between impeller and casing.

**Description** — The impeller ports are comparatively narrow; face seals instead of ring seals are used. Sudden changes in velocity or flow direction are avoided by gradually diverging clearance areas and the absence of sharp outside or reentrant angles. Impellers are screwed on simplifying installation. Catalog Number 940 illustrates and describes in detail the makers line of centrifugal pumps, other impellers, two vane, four vane, six vane, open type. The several types of pumps offered include horizontal shaft single stage priming pumps, vertical shaft, shielded bearing, wet pit, inverted unit pump, — (or dry

duction of skin friction and proper hydraulic relation between impeller and casing. Sudden changes in velocity or flow direction are avoided by gradually diverging clearance areas and the absence of sharp outside or reentrant angles. Impellers are screwed on simplifying installation. Catalog Number 940 illustrates and describes in detail the makers line of centrifugal pumps, other impellers, two vane, four vane, six vane, open type. The several types of pumps offered include horizontal shaft single stage priming pumps, vertical shaft, shielded bearing, wet pit, inverted unit pump, — (or dry

pit type). Catalog and data sheet for submitting data on liquids, solids, capacities, operating conditions so that recommendations may be made available on request.

AMERICAN MANGANESE STEEL DIV., Dept. CP, Chicago Heights, Ill.

When inquiring specify CP8143 — see information request blank, pgs. 2-3

## New Packing List Protector Saves Critical Materials — Cuts Cost

*Made of asphalt plywood and easily affixed to  
crates through pre-punched nail starters*

**Uses** — To provide reliable and convenient protection to packing lists for shippers.

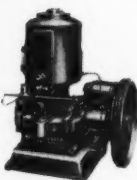
**Features** — Made of non-critical materials replacing metal and plywood at a fraction of their cost.

**Description** — This new type packing list protector is fabricated from asphalt plywood. These covers are available in three sizes: 6 x 8, 8 x 11, and 10 1/2 x 15 inches. They are adequately dished to take bulky packing lists, assembly instructions etc., and are firmly affixed to the outside of crates or boxes through pre-punched nail starters. They are furnished in natural black asphalt color and also in the complete range of colors required by the various Service Branches.

PHILIP CAREY CO., Dept. CP, Lockland, Cincinnati, Ohio.

When inquiring specify CP8144 — see information request blank, pgs. 2-3

## BEACH-RUSS Rotary PUMPS



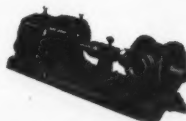
### VACUUM PUMPS

for chemical processing, drying, distillation, impregnation, packing, exhausting. Vacuum as high as 100 microns on wet operations. Capacities from 1 to 750 c.f.m. Top volumetric efficiency and long quiet service, assured by exclusive Beach-Russ rotary design, lubricating system and slow operating speed. Bulletins 75 and 76.



### AIR COMPRESSORS

for pressures up to 30 p.s.i. for mixing, agitation, chemical processing, oil and gas burning, etc. Positive rotary action and automatic lubrication assure high mechanical efficiency. Capacities — 6 to 375 c.f.m. Gas boosters—capacities 300 to 22,000 c.f.h. Bulletin 78.



### LIQUID PUMPS

for processing liquids, semi-fluids and pastes, at pressures to 50 p.s.i. and at high or low temperatures. Simple rotary design and corrosion resistant construction. Capacities — 4 to 440 g.p.m. Bulletin 62.

**BEACH-RUSS COMPANY**  
40 CHURCH ST. NEW YORK, N. Y.

When inquiring specify CP8142 — see information request blank, pgs. 2-3

## FOR VACUUM PROCESSES— STEAM-JET EJECTORS

Steam-jet ejectors are a reliable and efficient means of removing air, gas or vapors from vacuum chambers in industrial processes. Ingersoll-Rand can furnish ejectors for practically any capacity and for absolute pressures as low as 50 microns Hg. Ask the Ingersoll-Rand engineer for details.



Twin-element, two-stage steam-jet vacuum pump with intercondenser.

Two-stage ejector mounted on a barometric-type aftercondenser.

4-288

**Ingersoll-Rand**  
11 BROADWAY, NEW YORK CITY

When inquiring specify CP8145 — see information request blank, pgs. 2-3



## PRODUCTION

### Chilling Units Adapted To Blood Plasma Production

*Now being used for desiccating blood plasma serums and water soluble medicaments*

**Uses** — Chilling units having wide application for shrinking, testing, hardening and stabilizing of metals are now adapted for desiccating blood plasma serums and water soluble medicaments.

**Features** — Inherent temperature control utilizing the expansion and contraction of the chilling chamber itself in temperature control.

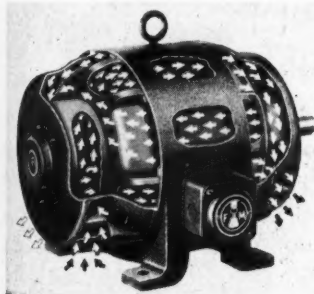
**Description** — The first of these machines built is now in operation in plant of one of the country's largest pharmaceutical manufacturing concerns. The refrigerating machines in this line employ a super-heat suppressor and a highly efficient oil separator to remove the oil from the refrigerant and deposit it back into the compressor. The new desiccating machine has a capacity to desiccate thirty-six bottles at one time.

MOTOR PRODUCTS CORP. (Deepfreeze Div.), Dept. CP, North Chicago, Ill.

When inquiring specify CP8146 — see information request blank, pgs. 2-3

### Fully Protected Polyphase Motors With Cross-Flow Ventilation

*No moving parts, closed frame; designed to carry 115% of load continuously without injurious heating*



**Uses** — For wide range of applications including pumps, line shafts, lathes, compressors, conveyors, hoists, mixers, pulverizing machines, blowers.

**Features** — Protected against chips, falling particles and dripping liquids. Ball bearings sealed in cartridge-type housings. Cross flow ventilation — see illustration — by protected inlets and exhausts at each end of motor (in frames 224 to 365). Complete protection in any position — floor, wall, ceiling mountings. Where space is limited conduit box cover can be assembled flush with frame, as conduit can be brought up between motor feet to tapped hole in motor frame.

**MOTOR VENTILATION** . . . air flows across stator core — exhausted at other end

**Description** — All-purpose, continuous-duty, polyphase squirrel-cage induction motor. Centrifugally cast "Copper-spun" rotor in popular ratings 50 HP, 1800 RPM and smaller. Larger ratings have a strong homogenous rotor structure made by brazing the end rings to rolled stock rotor bars. Frames are cast in one piece to give added strength. Motors rated 40 C and designed to carry 115% load continuously without injurious heating (1.5% service factor). Twelve page illustrated bulletin Number 1160 on request.

**FAIRBANKS, MORSE & CO.,** Dept CP, 600 So. Michigan Ave., Chicago, Ill.

When inquiring specify CP8147 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

## for CONVEYOR AND DRIVE CHAIN

### MAINTENANCE PARTS SERVICE

### CHECK WITH LINK-BELT



• The importance of every man doing his job has doubled as the United Nations constantly step up the tempo of war. And the importance of industry keeping its machinery in top production form is absolutely essential. Keep the wheels turning. Prevent overworked machines and equipment from breaking down. Frequent and thorough inspection of your equipment will detect potential failures, and prompt attention to extra care and maintenance will avert major repairs. Check your conveyor and drive chains now and place orders likely to require early replacements.

Our engineering staff is at your service.



### LINK-BELT COMPANY

Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Dallas 1, Minneapolis 5, San Francisco 24, Toronto 8. Offices, warehouses and distributors in principal cities.

9256-A



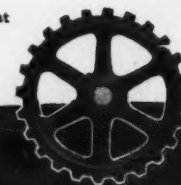
Chicago Plants



Indianapolis Plant



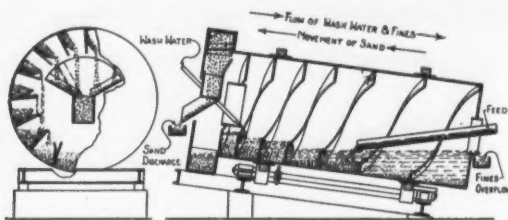
Ordnance Plant



## LINK-BELT CHAINS AND SPROCKETS

For Conveying and Mechanical Power Transmission

When inquiring specify CP8148 . . . see information request blank, pgs. 2-3



## Counter Current Classifiers for Classifying Washing Sizing Advantages

Will start under full load no matter how long it has been shut down.

Low maintenance due to rolling action of material in classifier.

### Recent Applications

Washing copper powder free of Sulphuric Acid.

Washing sludge from scrap in a Detinning Plant.

Strips of scrap as large as 1/4 inch by 12 inches.

Write for information and

Bulletin 39-A

**HARDINGE**  
COMPANY, INCORPORATED - YORK, PENNSYLVANIA  
NEW YORK, CHICAGO, SAN FRANCISCO, TORONTO

When inquiring specify CP8149 — see information request blank, pgs. 2-3

## PRODUCTION

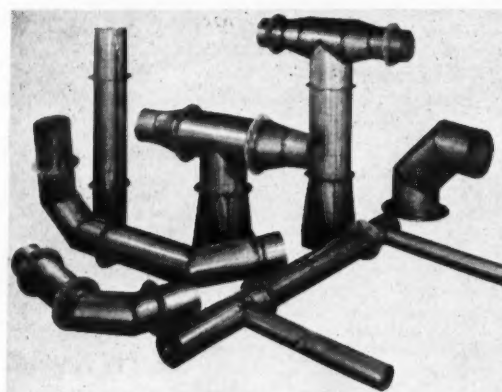
### Step-Valve Chemical Pumps With Electronic Volume Control

*Tubes convert ac to controlled dc providing variable armature voltages for operating motors*

**Uses** — The electronic volume control used on this step-valve pump for chemical and high pressure services provides stepless, wide range control of motor speeds and volume of liquid pumped.

**Features** — This electronic control by varying the speed of the motor from approximately 10% to maximum, makes it possible to vary volume up to the full capacity of the pump, to select the motor speed (or volume pumped) during operation or to preset the speed before starting. It may be automatically operated by a flow-meter, temperature or pressure control or other instruments. Affords all the advantages of dc variable speed drives from ac power lines.

**Description** — This control system employs electronic tubes to convert ac to controlled dc, thus providing variable armature voltages for operating motors. The system not only provides single dial motor speed control from conveniently located station, but also performs the additional functions of starting, accelerating, motor protection and dynamic stopping. This control by varying the speed of the motor, from approximately 10% to a maximum, makes it possible to vary volume up to the full capacity of the pump, to select the motor speed (or volume pumped) during operation or to preset the speed before starting. It provides an ideal system for controlling one or more pumps from a single remote station as well as for at the pump



### PIPE SECTIONS

These pipe sections are made from light gauge sheet, formed and welded, and are used in connection with exhaust piping for acid resisting units.

25 years of fabrication experience with all grades of alloys is available for special work.

Write for Bulletin CP 30

**ALLOY MFG. CO.**

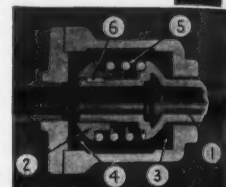
30th Street  
Pittsburgh, Pa.

When inquiring specify CP8150 — see information request blank, pgs. 2-3

## YOU PACK UP YOUR TROUBLES when you stop packing stuffing boxes

**P**ACK up your troubles is good advice. But packing and repacking isn't the way out of stuffing box and steam fit troubles. Much better advice is to switch to the Johnson Rotary Pressure Joint—the modern "stuffing box" that has no packing, and is completely self-oiling, self-adjusting and self-aligning besides.

50,000 installations of the Johnson Joint, all within less than ten years, show how rapidly industry is learning that the only sure way to pack stuffing box troubles out of the way once and for all is to stop packing.



### The Johnson Rotary Pressure Joint

• Nipple (1) fastened to roll. Sliding collar (2) keyed (6) to nipple. Carbon graphite seal ring (3) and thrust ring (4), which eliminate packing and galling. Spring (5), for initial seating only. In operation joint is pressure-sealed.

**SPEED UP PRODUCTION**  
from Dry Cons. Calenders, Mills, Ironers, and similar machines.  
1. Eliminates many causes of machinery shutdown—saves valuable production time.  
2. Offers a simpler, neater way to provide more efficient methods of draining rolls and drums.

WRITE FOR  
BULLETIN

Product of The Johnson Corporation

826 WOOD STREET

(L) THREE RIVERS, MICH.

When inquiring specify CP8151 — see information request blank, pgs. 2-3

## Prevent RUST · SCALE · DIRT From Clogging Steam Equipment



**YARNALL-WARING  
STRAINERS**

"The Screen's the Thing"

- **A High Grade Monel Woven Wire Basket** with mesh fine enough to catch the dirt—yet ample free area for passage of clean condensate, oil and other fluids.
- **Body Cadmium Plated Inside and Out for Protection Against Corrosion**
- **Readily Removed Steel Blow-Off Bushing**



- **Bushing Automatically Aligns Screen**
- **Thousands in Use — Sold by Over 100 Mill Supply Houses**
- **6 Sizes 1/2" to 2" for Pressures up to 600 Lbs.**

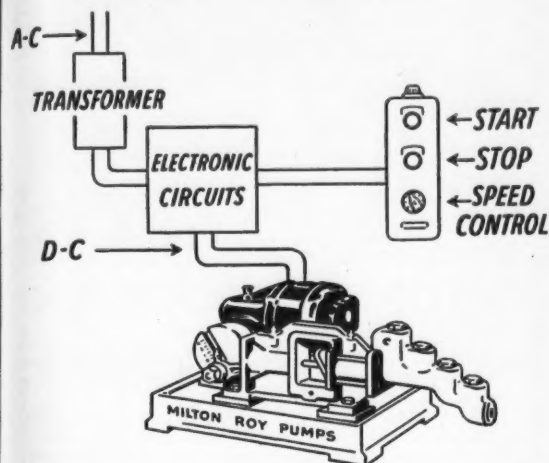
See Your Supply House  
or write for Bulletin S-200

**YARNALL-WARING COMPANY**  
125 Mermaid Avenue PHILA. 18, PA.

When inquiring specify CP8152 — see information request blank, pgs. 2-3



## PRODUCTION



**ELECTRONIC VOLUME CONTROL FOR STEP-VALVE PUMPS** provides stepless control of motor speeds and volume of liquid pumped

control where frequent changes in volume may be desired while the pump is operating. With this control system acceleration is automatic. Push the "start" button and the motor comes up to predetermined speed without dangerous current peaks. Should a momentary overload be thrown on the motor the armature current is limited to a safe value. Should the overload be sustained a thermal relay takes the motor off the line. Push the stop button and the control equipment provides dynamic braking, stopping the motor instantly. Another advantage of this control is its adaptability to both manual operation, in its usual form and to operation by means of other electrical circuits in conjunction with flow meters or other control apparatus. The maker's pumps are equipped with mechanical means for varying the length of the piston stroke. This mechanical stroke adjustment is used to advantage in combination with electronic motorspeed control to increase or decrease pump discharge pressures as well as the volume of liquid pumped. The pumps are built in all metals that can be cast forged or machined, also in transparent plastics for practically all chemical purposes. Built for high pressure services up to 20,000 pounds per sq. inch and in a number of step-valve designs to handle tar, asphalt and other viscous materials as well as light solvents, solvents in suspension etc. Complete catalog is available upon request.

MILTON ROY PUMPS, Dept. CP, 1310 East Mermaid Ave., Philadelphia, (Chestnut Hill), Pa.

When inquiring specify CP8153 — see information request blank, pgs. 2-3

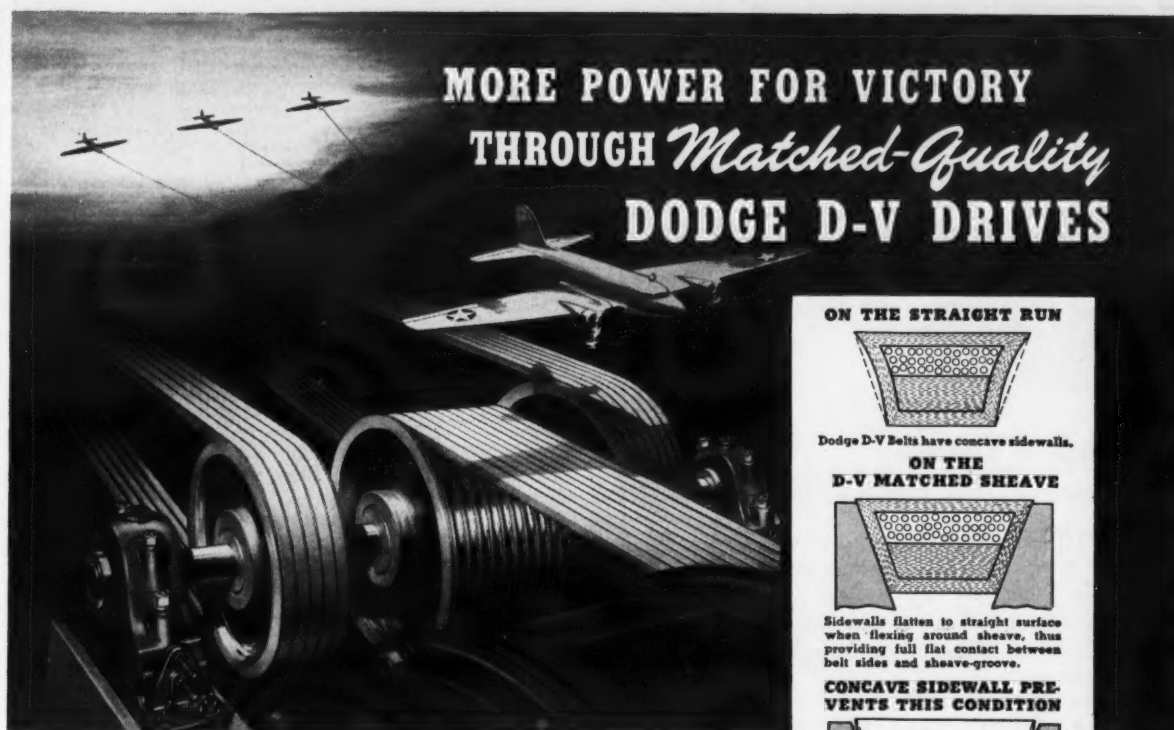
### Portable Metal Coating Equipment

Portable metal coating process comprising electrotyping, metal cleaner and applicator is described in small illustrated folder, which discusses advantages of silver coated connections. Applications in plating, replating and touching up rust and corrosion resisting coatings of other metals are also illustrated. Available in silver, cadmium, tin, copper, zinc, nickel and gold. Plating current for small jobs obtained by dry batteries. Rectifier is available. Literature on request.

RAPID ELECTROPLATING PROCESS, INC., Dept. CP, 1414 S. Wabash Ave., Chicago, II, III.

When inquiring specify CP8154 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943



## MORE POWER FOR VICTORY THROUGH *Matched-Quality* DODGE D-V DRIVES

### Matched to Get More Battle Power Out of Horsepower

In thousands of war production power transmission installations, Dodge Matched-Quality D-V Belts and Sheaves are delivering maximum developed horsepower to the point of production, to create more battle power and hasten Victory. Because sound engineering is combined with precision manufacturing, Dodge Matched-Quality D-V Drives have proven efficient, economical and able to stand the punishing 'round-the-clock' performance demanded today.

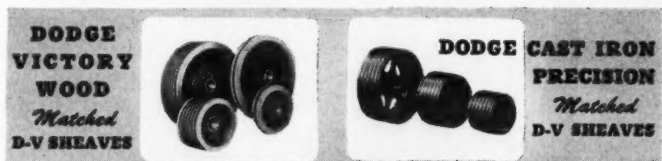
### You Get These Advantages In Dodge D-V Matched Drives

1 — Sheaves (in metal or "Victory" wood) have precision groove diameters, matched with D-V Belts, for uniform belt tension; each belt pulls its share. 2 — D-V Belts have concave sidewalls which, when flexed around sheave, form straight surface for full contact with flat sides of grooves; full transmission of power; longer belt life. 3 — Clean, noiseless drives, requiring no lubrication

of any kind . . . no oil leakage or throwing of lubricant to damage work or rot belting. 4 — D-V Belts, cured under tension, require no adjustment, last longer; won't sag or slip. 5 — Matched sheaves and D-V Belts form complete modern power transmission unit backed by one responsibility: DODGE!

See Your Local Dodge Distributor or Write For Data to

DODGE MANUFACTURING CORPORATION, Mishawaka, Indiana, U. S. A.



# DODGE

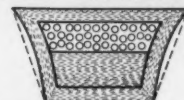
MISHAWAKA

THROW ALL YOUR SCRAP INTO THE FIGHT! BUY MORE WAR BONDS!  
THE RIGHT DRIVE FOR EVERY JOB



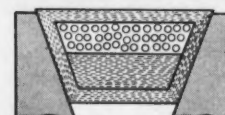
D-V Drive on Foundry Sand Blaster.

### ON THE STRAIGHT RUN



Dodge D-V Belts have concave sidewalls.

### ON THE D-V MATCHED SHEAVE



Sidewalls flatten to straight surface when flexing around sheave, thus providing full flat contact between belt sides and sheave-groove.

### CONCAVE SIDEWALL PREVENTS THIS CONDITION



Sidewalls that are flat on the straight run, bulge in center as they flex around sheave, thus making only partial contact with groove, and causing undue wear.

### EQUAL TENSION IN DODGE D-V BELTS



Correct engineering and precision manufacturing of both D-V Sheaves and D-V Belts ("Matched Quality") assure even tension on all belts of D-V Drives.

### UNEQUAL TENSION IN OTHER BELTS



If V-Belts and Sheaves are NOT matched, some belts will be too loose, others too tight; unequal tension means power loss and undue wear.

PUT ALL YOUR POWER IN THE JOB

When inquiring specify CP8155 . . . see information request blank, pgs. 2-3

# AJAX

## LO-VEYORS



### Standard Vibrating Conveyors for Open or Dust-proof Operation

High efficiency, self-contained and ready to run. Choice of open or closed pan and tubular types. Get rid of belts, chains, idlers, rollers, etc. Drive unit in automatic balance and fully enclosed. Write, giving material and tonnage handled.

**AJAX** FLEXIBLE COUPLING CO.  
Incorporated 1920 **WESTFIELD, N. Y.**

When inquiring specify CP8156 — see information request blank, pgs. 2-3

### Put your SEALING PROBLEMS UP TO FEL-PRO

Industries of every type are calling on Fel-Pro for help in solving war-intensified problems on Gaskets, Mechanical Packing and Stripping.

Most insistent has been the demand for a material to replace rubber and other critical materials. After thorough research and testing, Fel-Pro engineers developed entirely new gasket materials — such as Syntoflex and Lignoflex. More than substitutes, for certain requirements, these are actually better gasket materials, with superior characteristics — more resistant to strong chemicals — not affected by petroleum products — better able to withstand increased pressures.

#### SEND FOR FREE MATERIAL SAMPLE FOLDER

Contains actual samples of 36 Fel-Pro materials, each designed for specific types of sealing requirements. Full descriptions, data, many application suggestions. If none of these materials solve your sealing problems, Fel-Pro's Special Development Staff is at your service.

Helping

"KEEP THE POWDER DRY"

One of Fel-Pro's new sealing materials is meeting military needs for an ammunition box sealing material with rubber-like characteristics, but which, in addition, is resistant to poison gas seepage.

Put It Up to FEL-PRO for solutions to problems involving GASKETS, MOULDING, STRIPPING, MECHANICAL PACKING and other types of Sealing Materials.

FELT PRODUCTS MFG. CO.  
1515 CARROLL AVE., CHICAGO, ILL.



When inquiring specify CP8157 — see information request blank, pgs. 2-3

## PRODUCTION

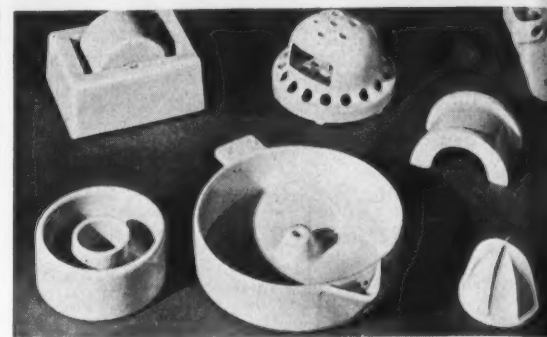
### Filter Can Use Various Aids in Clarifying Sugar, Fruit Syrups

Available in various types and sizes for wide range of food products; long filtering cycles, easy cleaning

**Uses** — These filters are designed to handle a wide range of materials with variable physical and chemical characteristics. Among the numerous food products, with which they may be used are: beverages and liquors, cereal products, chocolate, cooking oils, edible oils, extracts, flavors, food colors, molasses, preserves, syrups, vinegar, shortenings. In filtering to improve quality, save raw material costs, recover solids or waste materials, to clarify and purify.

**Features** — Adequate filtering area to meet flow characteristics of the material. Sufficient cake holding capacity to provide for long filtering cycles before there is need for cleaning. Permits use of diatomaceous earth filter aids or other filter aids and of activated carbon to accelerate filtration or to purify, decolorize, deodorize or deodorize product, as in clarifying colored sugar syrups, fruit syrups or edible oils. Permits operation at any desired temperature or pressure.

**Description** — Made in standard and special designs to meet specific requirements. Can be of materials to prevent contamination, allow for thorough cleaning and sterilization and resist corrosion or abrasion. Plate and frame filter consists of required number of individual chambers assembled in self-contained unit. Side bars on which plates and frames rest are made of heavy steel bar stock (rod in



### COLONIAL PORCELAIN

#### useful in chemical industry

Colonial makes all types of porcelain to serve every conceivable purpose. Many colors besides white are available. Colonial Porcelain pieces, parts and fittings are made to customers' specifications and are molded to uniform tolerances. Quality, too, is uniform, for each piece is processed in gas-fired kilns in which temperature is controlled within a narrow range.

Important for chemical uses is Colonial Porcelain's alkali and acid resistant qualities. Also it will not rust or disintegrate and is fire and fume resistant. Send us samples or drawings for price quotations.



The Colonial Insulator Co.  
967 Grant St., Akron, Ohio  
Chicago Office: 1706 Fullerton Ave.

When inquiring specify CP8159 — see information request blank, pgs. 2-3

## DON'T TIE UP VALUABLE MAN-POWER ON MAINTENANCE WORK

Use CHIKSAN Ball-Bearing Swing Joints on your flexible lines and release more maintenance men for production jobs! CHIKSAN Swing Joints have no packing glands to keep tight . . . nothing to require adjustment. Full 360° rotation in 1, 2 and 3 planes, turning on double rows of steel balls. CHIKSAN Swing Joints are liquid-, vapor- and gas-tight on either pressure or suction lines. Sizes from 3/8" to 12". Larger sizes to order.



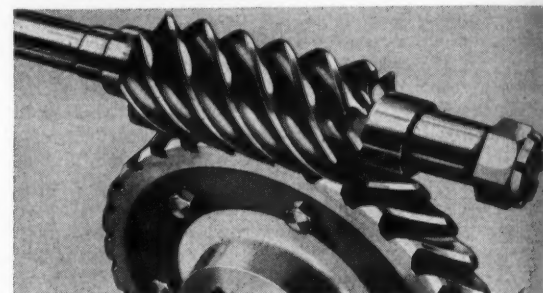
STYLE No. 50

Low Pressure Type. One of over 500 different Types. Styles and Sizes for pressures from 300 to 3000 lbs. and temperatures to 700° F.

REPRESENTATIVES IN PRINCIPAL CITIES  
DISTRIBUTED NATIONALLY BY CRANE CO.



When inquiring specify CP8158 — see information request blank, pgs. 2-3



### "Not one penny for repairs"

The operating executives in a number of America's largest corporations report on the performance of their Cleveland Worm Gear Speed Reducers—some installed as early as 1920: "More than 20 years—not a nickel's worth of repairs" • "12 years—300 days a year—still running like new" • "Every hour of the year; no attention except to check lubrication" • "Over 15 years without inspection" • "Since 1929 on our conveyors. No replacements" • "Installed in 1924, still going strong." Thousands of Cleveland Drives are operating today with never an hour of shutdown time—never a cent for repairs. Install Cleverlands on your Process Plant Equipment!

THE CLEVELAND WORM & GEAR COMPANY  
3257 East 80th Street • Cleveland 4, Ohio  
Affiliate: The Farval Corporation, Centralized Systems of Lubrication  
In Canada: PEACOCK BROTHERS LIMITED



When inquiring specify CP8160 — see information request blank, pgs. 2-3





**I WAS CUT IN  
5 SECONDS  
WITH A  
CLIPPER**

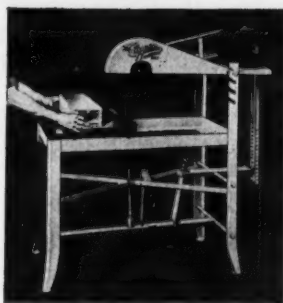
**Yes... YOU CAN CUT SILICA  
BRICK IN 5 SECONDS WITH  
A CLIPPER MASONRY SAW**

## 'TAILOR-MAKE' SPECIAL SIZES

### THE SPEED AND ECONOMY IS AMAZING!

You can easily cut any masonry material with Clipper Masonry Saws... Clay, Concrete, Magnesite, Sillimanite or Acid Resistant Brick.

Write for latest Catalog.

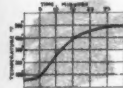


**CLIPPER MANUFACTURING CO.**  
4004 MANCHESTER ST. LOUIS, MO.

When inquiring specify CP8161 — see information request blank, pgs. 2-3



ACCURACY  
UNIFORMITY



SPEED  
FAST RECOVERY



WIDE RANGE  
FLEXIBILITY



**What every Chemist  
wants in a  
LABORATORY  
OVEN**

Faced by need for more accuracy and speed despite shortage of manpower, busy chemists today make most effective use of a Despatch laboratory oven. It gives them just what they want in the way of better performance.

**ACCURACY** through heat range to 260° C. (500° F.) is automatically maintained within close limits. With excellent heat uniformity, this gives fine "straight line" holding.

**SPEED** for more tests daily results from extra-fast heat transfer and

high-volume airflow. Ideal for rush work with no sacrifice of accuracy.

**FLEXIBILITY** for wide use assures prompt response to controls; no overshooting or lag. Gives maximum utility for many jobs. Details in bulletin.

**ASK YOUR LOCAL DEALER** for this new Bulletin 105-CP. Fully illustrated. Gives uses, details and features of Despatch laboratory ovens.

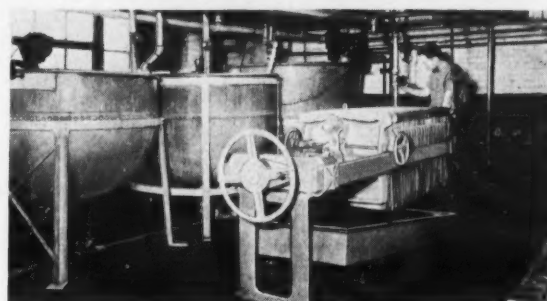
**DESPATCH**  
OVEN COMPANY MINNEAPOLIS



When inquiring specify CP8162 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

## PRODUCTION



FILTER HANDLES 1200 GAL. OF MAPLE SYRUP PER HR.

smaller filters) set against and bolted to the skeleton. All plates are set between rugged head and follower and are equipped with handles to permit easy handling and removal from filter. The assembled plates and frames are pressed together to form a tight, compact filtering unit by means of a large steel screw which forces the follower toward the head squeezing the plate and frame assembly between them. Any type and size can be supplied with plates and frames as small as 7 in. sq. or large as 56 in. sq. from 1 chamber to 60. Capacities from 40 gal. or less to 8000 gal. per hr. Complete details regarding applications to specific operations on request.

T. SHRIVER & CO., Dept. CP, 810 Hamilton St., Harrison, N. J.

When inquiring specify CP8163 — see information request blank, pgs. 2-3

## A HEAVY DUTY Mobile BAGGER-



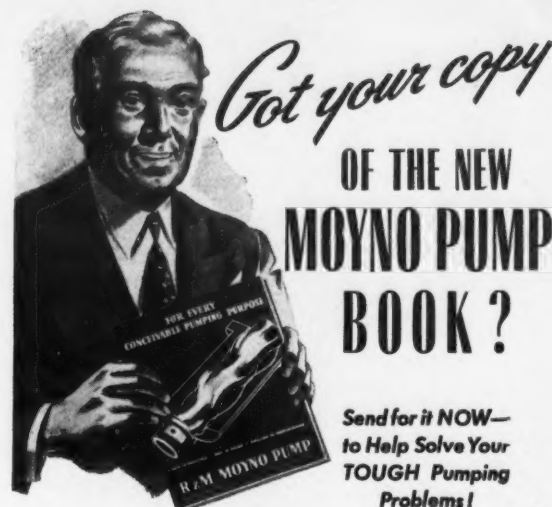
**The  
CONSOLIDATED  
Model 105**

Handles open mouth cotton, burlap or multiwall paper bags of from 50 to 200 lbs. capacity. Has an adjustable sewing head and a low, fixed-height, slat conveyor.

A fast, dependable, general purpose machine for continuous operation in a production line or intermittent operation at any point in the plant. Write for full information.

**CONSOLIDATED PACKAGING MACHINERY CORP.**  
BUFFALO, N. Y.

When inquiring specify CP8164 — see information request blank, pgs. 2-3



**Send for it NOW—  
to Help Solve Your  
TOUGH Pumping  
Problems!**

Now is the time to give your pumping setup a really critical analysis. For, with today's demands, the type of pumps you use might well account for the difference between output goals met or missed—and between profit and loss.

This new R & M Moyno Pump book will aid you in making that analysis, because it compares the revolutionary Moyno Pump with other types—weighing its advantages on the scale of actual experience in countless industries. The Moyno has cut maintenance costs to a fraction of former bills, because of its unprecedented resistance to wear. It has slashed down-time 'way down, because of its extreme accessibility. And it has improved product quality by handling heavy viscous and abrasive liquids—without turbulence or cavitation.

Get your copy of this new book! It was written by pump engineers for other engineers and production men—in specific, unadorned, factual terms. And it's yours... for the asking. Mail this coupon today!

### ONLY ONE MOVING PART!

Here's the patented principle of the R & M Moyno Pump's amazing performance. A single-threaded helical rotor revolves in a double-threaded helical stator, providing pumping action like that of a piston moving through a cylinder of infinite length.



Moyno pumps are manufactured under R. Moineau patents.

ROBBINS & MYERS, Inc., Moyno Pump Division, Springfield, Ohio

Please send me the new 8-page book on the R & M Moyno Pump.

Name.....

Firm Name.....

Address.....

Pump will handle.....

When inquiring specify CP8165 — see information request blank, pgs. 2-3

Page 61



## OUR STORY IN PICTURES LEAVES NOTHING UNTOLD

★ Within fifty-six pages, profusely illustrated, is as much of the story of the adaptability, economy and efficiency of overhead handling with **AMERICAN MONORAIL EQUIPMENT** that can be told without personal consultation.

If you are interested in producing more war material and at the same time preparing for post-war activities, do two things. First, send for American MonoRail Picture Book, see how this equipment is efficiently serving hundreds of handling jobs. Second, send for the American MonoRail Engineer to show you additional advantages to your individual problem. Write for your copy today!

**THE AMERICAN MONORAIL CO.**  
13109 ATHENS AVENUE ★ CLEVELAND 7, OHIO

When inquiring specify CP8166 — see information request blank, pgs. 2-3  
Page 62

## PRODUCTION

### Impact Mill For Disintegrative Treatment of All Fluid Mixtures

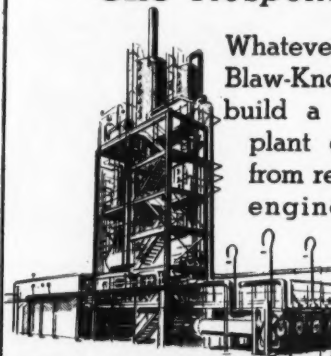
*Rotor produces impact by means of centrifugal force; applications in food, dairy, beverage plants*

**Uses** — For disintegrating, dispersing and emulsifying solids and liquids and pastes. Many applications of which the following are representative: cosmetics, dye, color and ink dispersion, emulsions, including polishes, lotions, mineral oils, pharmaceuticals and food products such as beverage concentrates and vegetable pastes.

**Features** — Designed to act upon fluids by utilizing a specially designed rotor to produce impact by means of centrifugal force. Utilizes the value of liquid impact — of application of the energy applied directly to the creation of surface energy required for a fine emulsion or production of a fine dispersion without dissipation of most of this applied energy in the form of heat. Can be operated at any temperature at which fluid treatment may be desired, ranging from that of liquid air to that of boiling mineral oil without any adjustments or fear of damage to equipment. Multiple admission ports permits feeding of several materials simultaneously.

**Operation** — Impactor has but one moving part — the rotor — and does not depend on the maintenance of close tolerances but rather on liquid impact at high speeds. The specially designed rotor divides the liquid materials into the form of a fine mist, the particles of which are driven by centrifugal action at tremendous velocity against an impact ring designed to direct the fluid film so formed into the periphery of the rotor and there from discharged. The se-

## PROCESS PLANTS from idea to Operation One Responsibility



Whatever your process—Blaw-Knox is ready to build a complete new plant or an addition from research through engineering, fabrication and construction, to initial operation.

Complete plants or equipment for the following processes . . .

Distillation	Kilning and	Organic Synthesis
Gas Absorption	Calcining	Emulsification
Solvent Extraction	Polymerizing	High Pressure
Solvent Recovery	Evaporation	Processing
Heat Transfer	Crystallization	Impregnating
Furnacing	Drying	Gas Cleaning
Cracking	Mixing and Stirring	and others

**BLAW-KNOX DIVISION OF BLAW-KNOX CO.**  
FARMERS BANK BLDG., PITTSBURGH, PA.  
Offices in Principal Cities

When inquiring specify CP8167 — see information request blank, pgs. 2-3

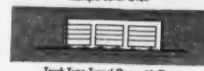
## ROSS DRYERS ADVANCED DESIGN



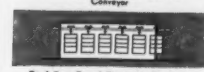
Peltone Dryer



Multiple Batch Oven



Truck Type Tunnel Oven with Floor Conveyor



Truck Type Tunnel Oven with Overhead Monorail Conveyor



Straight Pass Conveyor Dryer



Cross Bar Conveyor and Inclined Entry Oven for Sampling

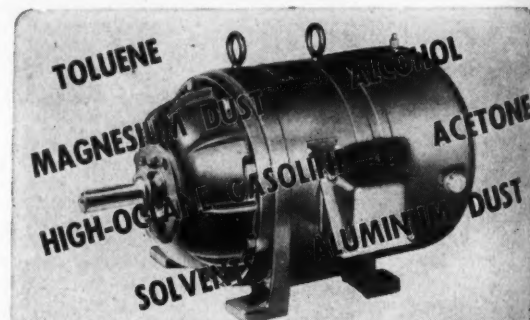
**WHY NOT  
GET THESE  
ADVANTAGES**

- 1 CONTROLLED TEMPERATURE
- 2 CONTROLLED HUMIDITY
- 3 CONTROLLED AIR MOVEMENT



**J. O. ROSS**  
ENGINEERING CORPORATION  
350 Madison Ave., New York 17, N. Y.  
Chicago • Montreal • Detroit

When inquiring specify CP8168 — see information request blank, pgs. 2-3



Need motors  
for **HAZARDOUS** areas?

You'll find your most complete lineup of explosion-proof motors here at General Electric. All tested and listed by Underwriters' Laboratories, Inc. Available in a wide range of ratings and types, in five different hazard classifications—Class I, Groups C and D; Class II, Groups E, F, and G. Let G-E engineers help you select the motor and control that best combines simplicity and security on your job. General Electric, Schenectady, N. Y.

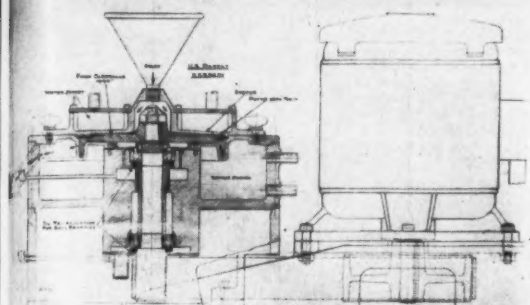
**GENERAL ELECTRIC**

When inquiring specify CP8169 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## PRODUCTION



IMPACT MILL . . . parts easily removed, reassembled for easy, thorough cleaning

quence of the liquid impact at high speeds is: First by centrifugal force against a radial baffle (first point of impact); second by rapid shear on discharging from baffle into rapidly moving teeth of the rotor plate (second point of impact); third by discharging from the rotor teeth against the second radial baffle (third point of impact).

**Description** — Designed to meet exacting requirements of various food processing operations. No hidden recesses or inaccessible spots making thorough cleaning easy. Because of lack of frictional contact no adjustments are necessary, but pulley speed changes can be made if desired. The clearance throughout the mill is in excess of twenty-thousandths of an inch. Because of the large amount of coolant area the dimensional changes due to high or low temperatures have no effect on the operation of the mill. Rotor (9 in. diameter), Stator (14 in. diameter) are cast bronze, funnel stainless steel. Bearings are oiled automatically and require a minimum of attention. Motor 1 HP to 5 HP AC or DC. Dimensions: 22½ x 17 x 33 ins. Net weight 300 lbs. Detailed information regarding application of impactor to specific problems on request.

ASBURY IMPACT MILL CO., Dept. CP, 204 Highland Ave., Abingdon, Pa.

When inquiring specify CP8170 — see information request blank, pgs. 2-3

### Hand Operated Spur Geared Chain Hoists ¼-2 Tons Capacity

*Light weight, automatic load brake, grease packed, completely enclosed mechanism, anti-friction bearings*

**Uses** — For wide range of hoisting and handling service where speed and easy operation are required.

**Features** — Automatic load brake. Entire mechanism operates in grease packed sealed enclosure; stamped steel hand chain wheel is housed in steel enclosure. Chain guide prevents the hand chain from "gagging," or fouling the wheel.

**Description** — In capacities of one quarter to two tons. Light weight is a feature of their design. The one quarter and one half ton lifting capacity hoists weigh forty-eight pounds. The one ton hoist weighs fifty-nine pounds and the two ton hoists eighty-one pounds. Like the electrically operated hoists of this maker these units have spur gearing, anti-friction bearings on all shafts, roller type lift chain.

MANNING, MAXWELL & MOORE, INC., Dept. CP, Muskegon, Mich.

When inquiring specify CP8171 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943



# America's Pipelines

## TODAY'S PATHWAYS TO VICTORY . . . TOMORROW'S ARTERIES OF FREEDOM

Men of the Pipelines we salute you! All Americans owe a debt of gratitude to the engineers, contractors, construction crews and operators whose genius, toil and cooperation have accomplished this crowning feat of modern engineering.

In spite of Hell, High Water and priori-

ties you have done more than just lay pipe and install pumps... YOU HAVE LAID A FOUNDATION FOR VICTORY!

We are proud of the part that Durametallic Packings and Seals are playing in providing uninterrupted delivery of petroleum products — the "Life-Blood" of attack.

★ BUY U. S. WAR BONDS and STAMPS

**DURAMETALLIC**  **CORPORATION**

KALAMAZOO

MICHIGAN

Chicago • Dallas • Detroit • Fredericksburg, Va. • Houston • Kansas City, Mo. • Los Angeles  
Montreal • Newark • New Orleans • San Francisco • Seattle • Tulsa • Youngstown, O.

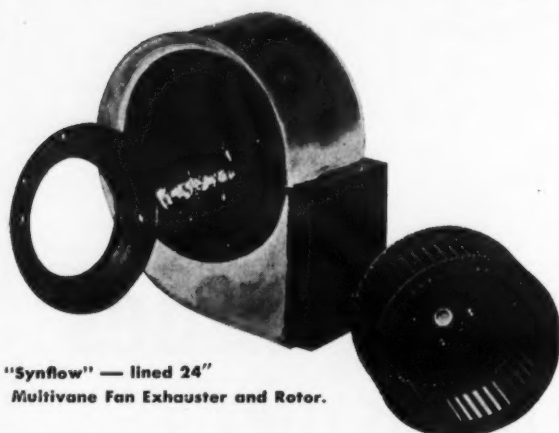
When inquiring specify CP8172 . . . see information request blank, pgs. 2-3

**SPECIFY**

# Synflow

**LINING**

**Quickly Applied . . .  
Equal or Superior to  
Rubber . . . Costs Less!**



"Synflow" — lined 24"  
Multivane Fan Exhauster and Rotor.

This modern synthetic compound is used to protect the inner or outer surfaces of virtually all types of equipment from the deteriorating effects of acids, chemicals, gases, oils, solvents, concentrated hot caustics and other products. Intricate constructions are no problem. Application may be made in our shop, or by our mobile unit in your plant. Any required thickness, from .020" to .060", may be applied, with a perfectly bonded, uniform coating assured. Savings up to 25%, compared to rubber lining having similar protective properties, are not uncommon; and the work can be done in much less time than the use of rubber would permit. Specify "Synflow" for your next equipment coating jobs. We will gladly furnish estimate upon receipt of installation details.



MAIN OFFICE: 15 SOUTH 36th STREET  
PHILADELPHIA, PA.

Branches: New York, Boston, Pittsburgh, Chicago.  
Gov't. Dept., Washington, D. C. West Coast:  
Goodall Rubber Co. of Calif.: Los Angeles, San  
Francisco, Seattle, Salt Lake City. Factory:  
Trenton, N. J. (Est. 1870). 73 Years of "Know  
How" — Our Most Valuable Commodity.

**Buy WAR Bonds . . . Buy MORE Bonds!**

## GOODALL

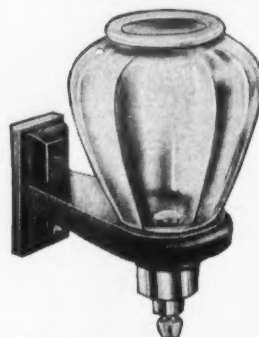
RUBBER COMPANY INCORPORATED

When inquiring specify CP8173 — see information request blank, pgs. 2-3

## PRODUCTION

**Soap Dispenser Made of Non-Vital  
Materials Has Simplified Design**

*Available without priorities; built for hard  
continuous industrial washroom service*



DISPENSER . . . made of non-critical materials, high gloss black finish

the hard service required by use in industrial plant washrooms. It is made from high tensile strength composition. Extra glass globes at very low cost. The globes may be easily cleaned and the twelve sided design provides a firm grasp when handling for re-filling or washing. This dispenser is one of a diverse line of dispensers and other washroom equipment and supplies which are all described in catalog sent on request.

CLIFTON CHEMICAL CO., Dept. CP, 246 Front St., New York, N. Y.

When inquiring specify CP8174 — see information request blank, pgs. 2-3

**Uses** — This push-type soap dispenser has been especially designed to give continuous, dependable service under constant use in busy plants.

**Features** — It is made of non-critical materials and can be obtained without priorities.

**Description** — This new-liquid soap dispenser is of the handy push-up type. It is simple in construction and involves no intricate mechanisms to become clogged or get out of order. It is extremely sturdy to withstand

**STOP Liquid Splashes-Sparks  
Flying Particles and Dusts**

WITH THESE MODERN  
**SAFETY  
DEVICES**

★ There is no "give" in this Cescro No. 750 General Utility Face Shield, which accounts for its ability to "take" and repel splashes, sparks and flying particles in the chemical process and metal fabricating industries. Extremely light in weight, with entire window metal bound for added strength and rigidity.

**CESCO No. 750  
FACE  
SHIELD**

enables its wearer to proceed aggressively, confident of working with the utmost in face and eye protection and comfort.

**New Cescro No. 94 RESPIRATOR**

Here is a respirator that FITS better, offers more COMFORT to the wearer! Carries a new Approval by the U. S. Bureau of Mines (No. BM-2142) for protection against Type A (Silica) — Lead and Nuisance Dusts. Unusually large filtering area (40 sq. in.) promotes easier breathing. New Exhale Valve with speaking diaphragm permits a normal exchange of conversation. Functions with a high degree of efficiency against all common dusts, making it unnecessary to change filters under average working conditions. Get special circular today. Write.



Cescro No. 94 Respirator

**CHICAGO EYE SHIELD CO.**

2337 Warren Blvd.  
Chicago • Illinois

When inquiring specify CP8175 — see information request blank, pgs. 2-3

*Easy to Operate*

**Streamlined for  
Self-Cleaning**

Automatic electric-motor operated American Standard Valve with hand wheel for manual operation in case of current failure. Available in 125 lb iron, 150 to 900 lb steel.



**R-S**  
15 to 900 psi



16-inch cast iron chain wheel operated valve for pressures up to 15 pounds. Complete range of sizes from 2-inches to 84-inches.

The action of an R-S Butterfly Valve is rapid and smooth. Four to six revolutions of the hand wheel or chain wheel fully open or close the valve vane. The compact, inherently narrow face-to-face dimensions, and the fact that there is no long stem or gate well, reduce clearance requirements to the minimum.

There is free passage for direct flow with no restrictions other than the streamlined vane. Sediment cannot collect since there are no right angle bends or reverse turns. Hence, the R-S Valve is ideal for the control and shut-off of dirty gas, dirty water, pulverized fuel or similar flowing solids.

The beveled vane wedges tight against the valve body for shut-off duty.

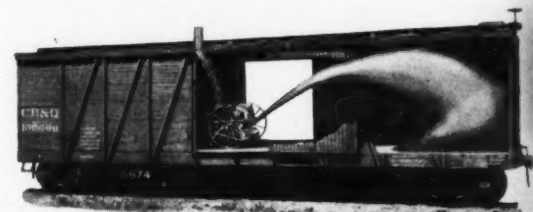
Write for catalog and detailed information about the use of R-S metals for resistance against heat, abrasion and corrosion.

VALVE DIVISION

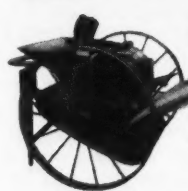
R-S PRODUCTS CORPORATION, 4531 Germantown Avenue, Philadelphia 44, Pa.

**R-S Streamlined BUTTERFLY VALVES**

When inquiring specify CP8176 — see information request blank, pgs. 2-3



**FILL THIS CAR  
THE QUICK WAY**



• With an S-A Box Car Loader one man can load and trim a box car with a great saving in time and effort. Loose, granular or lumpy material up to 2' in size is whirled out in a stream to the far end of the car by centrifugal action. So automatic is the Car Loader that, after being easily pushed into place by one man, it may be left unattended. This means silicosis hazards from dust are reduced to nil. Save time . . . save manpower . . . save man with an S-A Box Car Loader.

Ask for Bulletin 240 with Full Facts

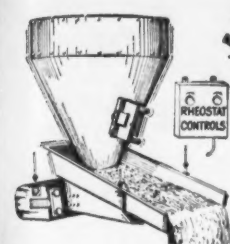
**STEPHENS-ADAMSON**  
MFG. CO.

Tellevel — Bin Level Controls Car Loaders SealMaster Ball Bearings Car Pullers Winches ChangeMaster Variable Speed Reducers Saco Speed Reducers

11 Ridgeway Ave., Aurora, Ill.

When inquiring specify CP8177 — see information request blank, pgs. 2-3

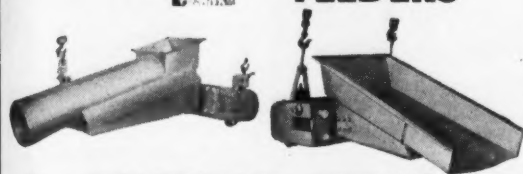




# SYNTRON

"Pulsating"  
"Electro-Magnet"

## VIBRATORY FEEDERS



for CONTROLLED FEEDING OF  
VARIOUS MATERIALS

Instant control of rate of feed by simple rheostat regulation.

Available in capacities from Ounces to 500 Tons per hour — and in trough styles such as —

FLAT PAN  
TUBULAR  
SPREADING

SCREENING  
COOLING  
HEATING

Write us about your problem

SYNTRON CO., 110 Lexington, Homer City, Pa.

When inquiring specify CP8178 — see information request blank, pgs. 2-3



Is YOUR Profit  
to be Read  
in a Drop  
of Water?

If success in manufacturing, packaging, handling or

storing your products depends on accurate, uniform moisture control, you'll want to investigate KATHABAR Moisture Engineering.

Scores of Kathabar systems are in use in chemical and food plants and remove or add moisture to air automatically and accurately.

The new "package units"—from 750 to 5000 c.f.m.—and the larger, specially designed units are available now to vital industries. Write for the free bulletins with full data.

SURFACE COMBUSTION • TOLEDO, OHIO

# Kathabar

SC

## CONTROLLED ATMOSPHERES

When inquiring specify CP8179 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

## PRODUCTION

### Dry-Cutting Metal-Cut-Off Band Saw — 10 in. by 18 in. Capacity

Blade removes less than 1/16 in. of metal; wet cutting attachment available if desired

Uses — For handling various types of cutting: rods, tubes, angles, heavy rounds or flats and irregular shapes.

Features — Set-ups are quick and machine handles itself, freeing man hours. Blade removes less than one-sixteenth of an inch of metal. Centralized controls, quick acting vise. Three point base — machine always free of torsional strain regardless of floor conditions.

Description — Rigid box frame. Guide rolls are wide and support entire blade. They turn slower on larger axles due to larger diameter. Adjustments are simple. Improved hydraulic control built into machine gives constant feed for every section. Four speed drive gives right speed for every material. Ball bearing motor requires no oiling and incorporates thrust bearings which are essential for operation in tilted position. Machine will handle 10 in. rounds or 18 in. flats. Actually flats of 20 in. can be cut. Motor 1/2 HP, any voltage available, single or polyphase. Standard equipment 110-60-1 or 220-60-3 motor. Floor space 66 in. x 31 in. Bed 11 in. wide, 44 in. long, 6 in. deep, 24 in. high. Blade length — 11' 5" x 3/4" x 21 gauge. Weight 750 pounds. Speeds 35, 90, 130, 190 ft. per min. Wet cutting attachment available but not necessary for operation of machine. Literature on request.

JOHNSON MFG. CORP., Dept. CP, Albion, Mich.

When inquiring specify CP8180 — see information request blank, pgs. 2-3

### HOW'S THIS FOR SAFETY AND SERVICE?



12 TIMES THE WEAR PLUS MORE PROTECTION

★ Surety's remarkable SURESEAL synthetic gloves, aprons, and sleeves set new endurance records. Actual use tests and testimonials give SURESEAL up to 12 to 1 longer life over former rubber or synthetics used—and defeats dermatitis, rubber allergies, and other costly hand hazards. Write Surety for descriptive literature and availability information now.

Largest and Original Producers of Synthetic Gloves  
**THE Surety RUBBER COMPANY**  
CARROLLTON, OHIO

When inquiring specify CP8181 — see information request blank, pgs. 2-3



It will  
**CREATE  
MIRACLES**  
in your test tubes  
and in your finished  
products, too!

● Get more stable emulsions,—finer dispersions,—smoother creams and pastes—and wider customer acceptance—with Bartlett-Snow Triple Action Colloid Mills.

—smoother creams and pastes—and wider customer acceptance—with Bartlett-Snow Triple Action Colloid Mills.

Featuring a new, revolutionary, exclusive and patented triple-action construction, Bartlett-Snow Mills reduce the materials to extremely small particle sizes,—mix them so intimately and thoroughly that you get smoother, better results than had previously been thought possible of attainment. The Rubber Reserve Corporation, for instance, on extensive tests open to all manufacturers of colloid equipment, selected Bartlett-Snow Triple Action Mills as standard for both laboratory and production processing in synthetic rubber manufacturing.

Bartlett-Snow Triple Action Mills are available in laboratory and four production sizes. They are positively non-foaming and easy to clean. They permit the gap between the rotor and stator to be set, or changed, with micrometric precision while the machine is running,—offer many other advantages.

You'll find full details in our Bulletin No. 94 —SEND for a copy TODAY!

**FREE OFFER:** Our completely equipped laboratory is available to prospective customers for test runs,—with or without the presence of your own technicians,—and with the assurance of greatest secrecy and confidence. Send us your samples. A trial run will convince you of the efficiency of these new machines.

**THE C. O. BARTLETT & SNOW CO.**  
6241 HARVARD AVENUE • CLEVELAND, OHIO

# BARTLETT-SNOW

## Triple Action

# COLLOID MILLS

When inquiring specify CP8182 — see information request blank, pgs. 2-3

**Send For  
YOUR COPY!**



The booklet "Jessop Stainless-clad Steel" just off the press represents the latest data available on this class of material.

**Jessop Stainless-Clad Steel** is manufactured under a patented process in which it is possible to control the uniformity of cladding thickness over the entire area of the product within 5% of the total thickness. Its performance is outstanding where corrosion of equipment must be avoided and product purity maintained, and its use makes possible substantial savings in material cost, without sacrificing the stainless surface advantages of corrosion resistance, appearance or sanitation.

We have pioneered in the manufacture of composite steels, (*Steels Of The Future*) and our Research Department is continually working on new developments—both in manufacture, to obtain the maximum in quality, and in application to further their use. A copy of this new booklet will be sent without obligation to users and fabricators of stainless equipment. Write for it today on your company letterhead.

\*U. S. Patent Nos. 1,997,538 and 2,044,742

**JESSOP STEEL CO.**  
HEAD OFFICE AND WORKS  
WASHINGTON . . PENNA.

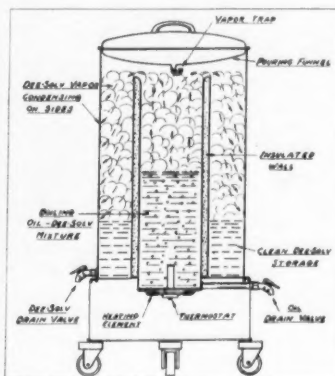


Established 1901

## PRODUCTION

### Oil Laden Solvents Reclaimed By Automatic Portable Still

*Distillation completed in 2 hrs., unit can  
be quickly and easily cleaned*



STILL . . . reclaims solvents

ture through pouring funnel which has vapor trap. The device is then plugged in to any convenient outlet (110 volts, 60 cycles, 1 phase outlet — AC). Construction is of 19 gauge steel — all area of unit exposed to solvent or vapors is hot dipped galvanized or metal sprayed. Outer chamber capacity is 19 gallons. Both chambers have drain

**Uses** — For the reclamation of oil laden chlorinated hydrocarbon solvents.

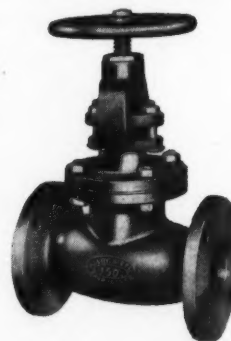
**Features** — Distillation process completed in about two hours as indicated by blinking light on front. Easy, quick and efficient handling of solvent. Thermostat control prevents overheating.

**Description** — The still is filled with five gallons of solvent and oil mix-

### It's a LONG TIME between replacements with ALOYCO VALVES

Today's shortage of manpower and materials makes it essential that you ask, "Will it last?" before you okay an order. It is characteristic of ALOYCO VALVES that they stand up under severe service. There has been no sacrifice in quality of materials or workmanship for quantity production of Alloyco Valves. Experienced foundry practice, accurate machining and rigid inspection insure the maintenance of high standards of excellence.

Alloyco Valves permit widely varying piping layouts because they are made in a complete range of types and sizes, as well as alloys. We can supply Alloyco Valves and fittings in materials most suitable for your application. Send us your inquiries.



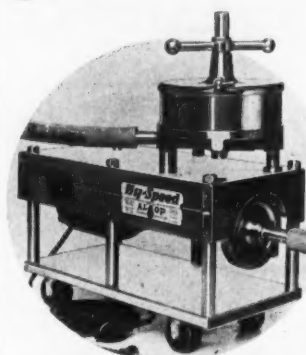
**ALOYCO**  
*Stainless Steel*  
**VALVES and FITTINGS**

GATE VALVES • GLOBE VALVES  
Y VALVES • CHECK VALVES  
LEVER THROTTLE GATE VALVES  
TANK VALVES  
SCREWED FITTINGS  
FLANGED FITTINGS  
GAUGE GLASS FITTINGS

**ALLOY STEEL PRODUCTS COMPANY, INC.**  
1390 WEST ELIZABETH AVENUE — LINDEN, NEW JERSEY

When inquiring specify CP8184 — see information request blank, pgs. 2-3

## Alsop "Sealed Disc" Filters



FILTERS ALL  
KINDS OF  
LIQUIDS

Any degree of filtration desired. High Clarification and polish.

The operation is simple, inexpensive, and easy to do.

These leakproof, small, compact filters can be portable, or pipe line connected.

Let us help you with your filtration problems.

**ALSOP ENGINEERING CORP.**

13 ALSOP SQUARE

MILDALE, CONN.

**ALSOP "SEALED DISC" FILTERS**

When inquiring specify CP8185 — see information request blank, pgs. 2-3

*Handle* **DRUMS, BARRELS**  
with loads up to **800 lbs.**  
**EASIER, FASTER, CHEAPER!**

*With a*  
**SABIN**  
*One-Man*  
**BARREL TRUCK**

Type  
L-3



The trucker does no lifting, carries no weight — and needs no helpers — when handling drum or barrel loads with the Sabin One-Man Truck. It loads automatically and rolls with exceptional ease. EXCLUSIVE THIRD WHEEL FEATURE, provides for easy break-over, insures better load support and permits loaded truck to stand alone. Rugged construction insures long life.

*Write for*  
**FREE BULLETIN**  
*showing all types*

**The Sabin Machine Co.**  
6536 Carnegie Ave., Cleveland, O.  
DISTRIBUTORS WANTED  
We invite your inquiries.

When inquiring specify CP8186 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## PRODUCTION

valves for removal of reclaimed solvent and oil upon completion of operation. Four inch casters provide for easy movement as required. Diameter 24 in. — height 47 in. Literature and complete information on request.

CIRCO PRODUCTS CO., Dept. CP, 2835 Chester Ave., Cleveland, Ohio.

When inquiring specify CP8187 — see information request blank, pgs. 2-3

## Tester Determines Strength of All Grades of Fibre Boxboard

*Simulates actual shipping conditions, registers results on scale in inch ounces per inch of tear*

**Uses** — For accurately determining the strength of fibre boxboard and similar materials, such as waterproof boxing material used for overseas shipments, also corrugated board from lightest non-test grade to the heaviest grade of double wall board as well as thin plywood and vulcanized fibre.



BOXBOARD STRENGTH accurately recorded on tester gauge

### Features — Design

of tester permits simulation of actual shipping conditions. **Description** — The design of the tester is based on a unit developed by this organization and used for several years in establishing specifications and controlling the quality of purchased fibre containers. The tester will determine the strength of boxboard from .014 liner to .140 inch solid kraft as well as waterproof boxing material used for overseas shipment which must withstand rough handling and extremes of moisture and temperatures. It will also measure strength without deforming or flattening the corrugations of corrugated board from the lightest non-test grade to the heaviest grade of double wall board. Mounted on a metal base the tester is simple in construction, having only one moving part. It consists of a pendulum on the end of which is a rod bent to form an arc of 90 degrees, with a triangular metal point one inch in height at the end. This point is shaped like the corner of a box in order to simulate actual shipping conditions, since the majority of boxes damaged in transit are punctured by the corners of other crates and boxes being forced against them. The simulation of actual shipping conditions also determined the one inch height of this point, as punctures penetrating such boxes to a depth of an inch or less usually do not injure contents. In operation the unit holds the material to be tested between two clamping plates which are level with the axis of the pendulum. The pendulum is operated by a trigger, and as this is tripped and the released pendulum swings through its arc, the number of degrees less than 180 degrees through which it swings is a measure of the energy dissipated in puncturing and bending the material being tested. The tester's scale, which has an indicating hand, is calibrated so that the reading is the actual inch ounces per inch tear made during the test.

GENERAL ELECTRIC CO., (Special Products Div.) Dept. CP, Schenectady, N. Y.

When inquiring specify CP8188 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

Here Are

*A Few of the Industries*

in which

# GATES V-BELTS of Synthetic Rubber

Have Been Tested and Proved

by YEARS of SERVICE

Five years before natural rubber supplies began to be curtailed, Gates was already supplying many industries with large quantities of V-Belts made entirely of synthetic rubber.

The synthetic rubber used was a very special one and was not used as merely a substitute for rubber. It was used because, in many applications, it is greatly superior to natural rubber. For example, under severe conditions of heat and oil, the Gates special synthetic V-belt actually outwears belts of natural rubber by as much as 230%.

This is the record not of just a few belts over a short period of time. It is the record of thousands upon thousands of Gates special synthetic rubber V-belts that have now been tested and proved by years of service in Aircraft Factories, in Ordnance Plants, in Steel Mills, in Machine Parts Plants, in Lumber Dry Kilns, in Food Processing Plants—in every kind of installation where heat and oil conditions are excessively severe.

The time has now come when Gates long and successful experience in the fabrication of synthetic rubber V-belts is particularly to your advantage because it can now be put to work for you right in your own plant.

You have only to look in your telephone directory and call the Gates Field Engineer. He will put at your service the full benefits of Gates knowledge and experience without the slightest obligation.



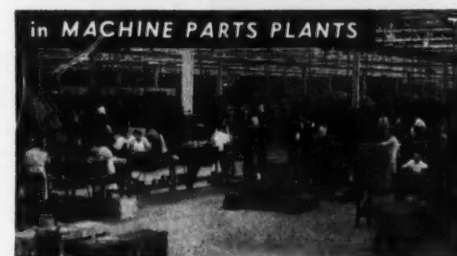
in AIRCRAFT Factories



in ORDNANCE Plants



in STEEL MILLS



in MACHINE PARTS PLANTS

*-and Many Others*

## THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

# GATES VULCO ROPE DRIVES

CHICAGO, ILL.  
549 West Washington

NEW YORK CITY  
215-219 Fourth Avenue

ATLANTA, GA.  
738 C. & S. National Bank Building

LOS ANGELES, CAL.  
2240 East Washington Boulevard

DENVER, COLO.  
999 South Broadway

DALLAS, TEXAS  
2213 Griffin Street

PORTLAND, ORE.  
333 N. W. 5th Avenue

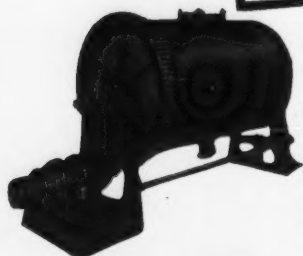
SAN FRANCISCO, CAL.  
1090 Bryant Street

When inquiring specify CP8189 . . . see information request blank, pgs. 2-3

## POINTERS TO BETTER PRODUCTION

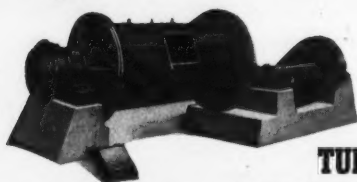
# ABBE

PEBBLE MILLS  
BALL MILLS  
TUBE MILLS  
JAR MILLS  
ROTARY CUTTERS  
DRY BLENDERS  
LIQUID MIXERS  
TURBINE SIFTERS



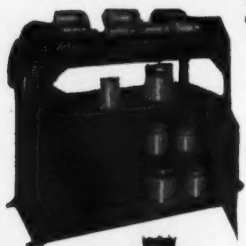
### BALL MILLS

and pebble mills for pulverizing and wet or dry grinding and mixing hot or cold, at any pressure or vacuum. For any material and volume of batch production. Include the best mill design, mounting and drive arrangements.



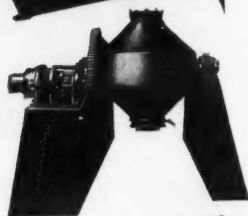
### TUBE MILLS

for continuous feed, processing and discharge in wet or dry grinding. Tube length and diameter to meet specific conditions; all steel or porcelain linings.



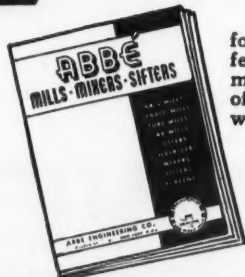
### JAR ROLLING MACHINES

for easy, safe grinding and mixing of batches from 1 qt. to 6 gallons, wet or dry. Any number and size of jars in single, or multiple roller arrangements of any length in single or multiple tiers.



### DOUBLE CONICAL BLENDERS

for dry materials, assure perfect dispersion and uniform mixing. Handle production of 2 to 370 cu. ft. Equipped with any type of drive.



Get a copy of this complete Abbe catalog.

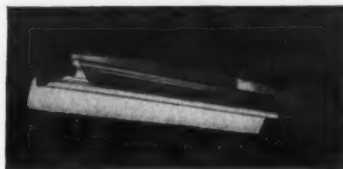
**ABBE ENGINEERING CO.**  
40 CHURCH STREET NEW YORK, N. Y.

When inquiring specify CP8190 — see information request blank, pgs. 2-3

## PRODUCTION

### Fluorescent Illuminator Has Die Formed One Piece Full Channel

*Provides greater channel strength on the horizontal and on the torque*



FLUORESCENT FIXTURE

**Uses** — This lighting unit is for use with fluorescent lamps. Die-formed one piece channel with unique metal bends that provide greater channel strength on the horizontal and on the torque.

**Features** — Special trigger supports allow quick, easy, reflector removal.

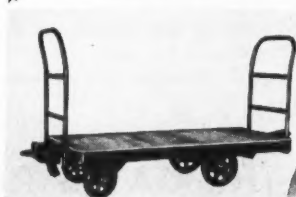
**Description** — Available in sizes for 2-40, 3-40 and 2-100 watt fluorescent lamps. All wiring and auxiliaries are fully enclosed. Starter switches are accessible without removing lamps and bump-proof end plates give added lampholder protection. Listed by Underwriter's Laboratories, Inc. Reflector is formed Masonite "reflector-board" and is finished in "300 White" high baked synthetic enamel. Egg crate louvers are available for lamp shielding where desired.

EDWIN F. GUTH CO., Dept. CP, 2615 Washington Ave., St. Louis, Mo.

When inquiring specify CP8191 — see information request blank, pgs. 2-3

**\$90,000.00 SAVED**  
**in ONE plant...**  
*by "WELD-BILT" Engineering*  
**in Materials Handling!**

- \* Wartime secrecy prevents telling the whole story of this "\$90,000.00 Saving", but it happened in a large new war plant. . .
- \* A routine call by a "Weld-Bilt" Engineer, a quick survey of specified materials handling equipment, a suggestion — accepted —
- \* and new "Weld-Bilt" equipment was substituted which performed the same work more efficiently at a tremendous saving in cost.



Weld-Bilt Trailer Truck (No. 650) with new "West Bend" time-saving Trailer Hitch (in inset).

Perhaps YOU have a problem that can be profitably solved by this thorough-going service in materials handling. Call on "Weld-Bilt" FIRST!

### WEST BEND EQUIPMENT CORPORATION

Materials Handling Engineers

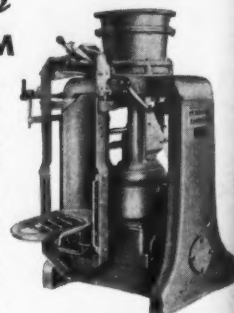
226 S. Water Street • West Bend, Wisconsin  
Manufacturers of Portable Electric Elevators, Two-Wheel and Four-Wheel Trucks, Skid Platforms, Barrel Racks, Tearing Machines, and special equipment.

When inquiring specify CP8192 — see information request blank, pgs. 2-3

**Pulverized and Ground Materials packaged quickly . . . economically by the**

### St. Regis VALVE PACK SYSTEM

Many producers of pulverized and finely ground materials have simplified their packaging operations and are saving money by using St. Regis Impeller Type Valve Bag Packers and 25, 50 and 100 lb. valve type St. Regis Multiwall Paper Bags. These sturdy, heavy-duty shipping sacks are filled and weighed automatically and simultaneously. Pressure of the contents closes the valve of the bag, making the use of closing equipment unnecessary. Packer is adjustable for various bag sizes, and variations can be made in design to adapt the Impeller principle to the vast range of products in the class for which it is specifically designed.



ST. REGIS 105 FV IMPELLER TYPE PACKER

In addition to Impeller Type Packers, St. Regis Valve Pack Systems include Belt, Screw and Gravity Type Packers for packaging various commodities.



MULTIPLY PROTECTION • MULTIPLY SALEABILITY  
**ST. REGIS PAPER COMPANY**

NEW YORK: 230 Park Avenue  
CHICAGO: 230 No. Michigan Ave.  
OFFICES IN PRINCIPAL CITIES

When inquiring specify CP8193 — see information request blank, pgs. 2-3



### "Electric fingers" TO DO YOUR PACKAGING

It's hard to find human fingers to do the work today, but Triangle Elec-Tri-Pak Vibratory Feed Weighers are ready to package all kinds of dry products, including powders, in cans, cartons, bags or bottles. The Elec-Tri-Pak handles your product gently; weighs it to fraction-of-an-ounce accuracy; saves time and money. Users report labor savings as high as 60%; space saving of 1/3 and more, and many other benefits. Models available to meet any requirements for semi-automatic or high speed completely automatic packaging. Write for literature.



**TRIANGLE PACKAGE MACHINERY CO.**

917 NO. SPAULDING AVENUE, CHICAGO

BRANCHES IN PRINCIPAL CITIES

OFFICES IN PRINCIPAL CITIES, UNITED STATES AND CANADA

When inquiring specify CP8194 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## PRODUCTION

### Precision Parts Cleaner For Use In Production of Electronic Devices

*Surging centrifugal action of basket produced with speeds varying from high to low*

**Uses** — Precision cleaning machine for use in connection with production of electronic tubes.

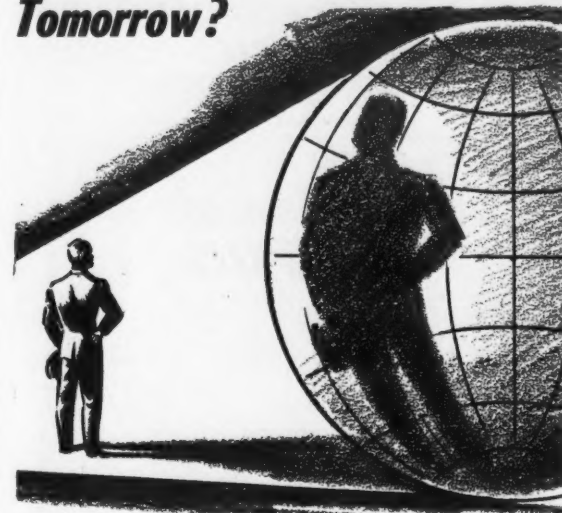
**Features** — To meet the specified requirements the design of this machine embodies the power of the maker's larger precision parts cleaning models, overall size of the heavy duty type work baskets and a new surging centrifugal action.

**Description** — This specialized cleaning machine is equipped with a powerful, air cooled fractional horsepower motor. The work basket two and one-quarter inches deep and three and five-eighths inside diameter. Nesting basket is divided into three compartments. Variable action of the basket in solutions. By snapping on the thermostatic switch, a surging centrifugal action of the basket is produced with speeds varying from high to low. More effective agitation follows with a resulting higher percentage of acceptable clean parts. Units emerge from the machine clean, bone dry and ready for assembly operations. This unit is an addition to a complete line of precision cleaning machines.

L & R MFG. CO., Dept. CP, 54 Clinton St., Newark, N. J.

When inquiring specify CP8197 — see information request blank, pgs. 2-3

## What's YOUR Place in the World of Tomorrow?



Chemistry will play a major part in shaping the world of tomorrow. What will be your place in it? Your professional, business and personal interests depend on your course from now on. To shape your thought and action, to help you see clearly the trend of chemistry and engineering, visit this year's Exposition of Chemical Industries at New York's Madison Square Garden, December 6 to 11.

What you will see there at the exhibits, what you can learn there by discussion with exhibitors' technical representatives may inspire and direct your thoughts into new channels.

The wealth of new materials and equipment developed to meet the stress of war will profoundly affect every chemist, chemical engineer and production head throughout industry. For every executive responsible for the future of every business that depends on chemical processes in its own or in customers' plants, attending this Exposition is virtually essential.

Be sure to attend! Bring your associates too.

**19th EXPOSITION OF CHEMICAL INDUSTRIES**  
MADISON SQUARE GARDEN • NEW YORK  
DEC. 6-11, 1943  
Managed by International Exposition Co.

When inquiring specify CP8199 — see information request blank, pgs. 2-3

## An Open Letter to INDUSTRY

Should you require APPROVAL or ENDORSEMENT before you stock and use

# VERD-A-RAY

read September Issue of OHIO STATE MEDICAL JOURNAL -- in an article it says that eyestrain is relieved through use of this lamp.

Also read SAFETY ENGINEERING MAGAZINE for March 1943 and learn how one war plant in one month in one department reduced hospital treated headaches by 69.13%, hospital dressed minor injuries by 54%, and saved 367 productive man hours, by proper installation of this new lamp.

Ask the sales clerk in any chain variety store what customers say about this new lamp when THEY COME BACK TO BUY MORE.

SAVE ELECTRIC CORP. -- TOLEDO 5, OHIO

When inquiring specify CP8195 — see information request blank, pgs. 2-3

## Uniform Separation

The new model GAYCO Centrifugal air separator makes possible the uniform and increased recovery of cement and other extremely fine materials within a range of 80 to 400 mesh.

- Greater Capacity
- Cleaner Trailings
- 99% Through 325 Mesh

- 25% to 30% greater recovery of fines

- Not affected by variation in speed or rate of feed.



Manufacturers also of "Reliance" Crushers, Screen, Elevators, Conveyors, Bin Gates, Grizzlies. Complete crushing, screening and washing plants for crushed stone, sand and gravel.

## Universal Road Machinery Co.

RUBERT M. GAY DIVISION 117 Liberty St. New York, N. Y.  
Canadian Representative: F. H. Hopkins & Co., Ltd., Montreal  
FACTORY & LABORATORY, KINGSTON, N. Y.

When inquiring specify CP8196 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

## FLUORESCENT FOR WAR PLANT OFFICE OR DRAFTING ROOM



### "Tops" for seeing . . . re-designed to WPB limits

Re-designed to meet the metal weight-limitations of WPB, the ADMIRAL is a natural for war plant offices. Conserves war material and provides efficient, high intensity, diffused light. Helps speed war plant paper work, reduces eyestrain. Puts 90% of its light down on desks or boards; rest goes upward to avoid ceiling contrasts. Especially good for work involving critical seeing, or in space with poor ceilings. Comes in 2, 3 and 4-lamp units. Requires at least A-1-j priority. Write for details.

Help prevent industrial accidents . . . guard moving parts . . . have good light . . . be alert.

THE F. W. **Wakefield** BRASS COMPANY  
RED SPOT LIGHTING FOR COMBAT OPERATIONS AND WAR PRODUCTION  
VERMILION, OHIO

When inquiring specify CP8198 — see information request blank, pgs. 2-3

## Even Handles Sugar as well as many other granular materials



Yes Sir — this is a new way to elevate and forms a positive, smooth-running, low-cost, integrated system for your plant — Practically maintenance free and of utmost flexibility.

### The "HAMMOND" Screw-Lift

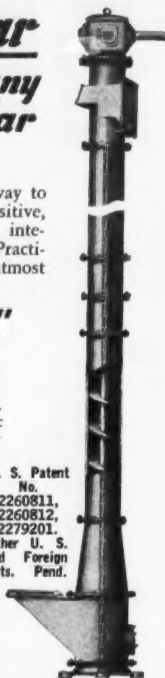
A complete unit in itself . . . of precision construction for capacities of 75, 300, 1000 or 2500 cubic feet per hour with controlled gravity feed or controlled power feed. Saves space over any conventional method of handling materials, and is dust-tight — moisture-tight and weather-tight.

#### Outstanding advantages

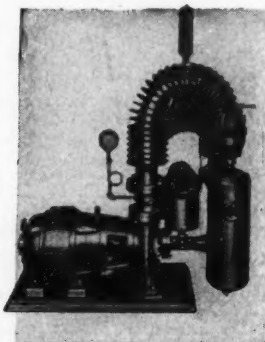
- Elevates to any height
- Eliminates fire hazards
- Dust-tight and weatherproof
- Self-cleaning beyond belief
- Quiet operation under load or empty
- Handles any free-flowing material
- Easy to install
- Low in maintenance cost

Write us Our Form No. M-500-2 will aid you in presenting your plant conditions from which we can offer a logical solution to your problem.

U. S. Patent  
No.  
2260811,  
2260812,  
2279201.  
Other U. S.  
and Foreign  
Pats. Pend.



When inquiring specify CP8200 — see information request blank, pgs. 2-3



### A Condensate Return System That Improves Quality Increases Production Saves Fuel Cost

THE Cochrane-Becker High Pressure System of Condensate Return is a remarkable new system of draining condensate from process equipment and returning it, freed of entrained air and gases, to the boiler, at high pressure and close-to-process temperature.

The principle is that of an eductor, the action of which is energized by a jet pump and balanced by a loop that insures continuous positive priming. An air separator in the circuit automatically and continuously separates entrained air and gases, and the condensate is delivered to the boiler without flash loss anywhere along the closed circuit of the C-B system.

Savings in process work are amazing. Write for details and copy of Cochrane Publication No. 3113.

COCHRANE CORPORATION, 3113 NORTH 17TH ST., PHILA., PA.

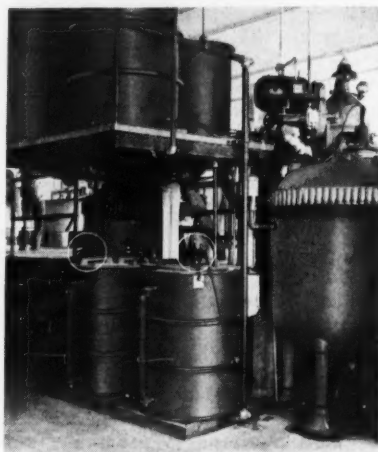
## Cochrane

When inquiring specify CP8201 — see information request blank, pgs. 2-3

## PRODUCTION

### Explosion-Proof Mixers Essential in Manufacture of Riboflavin

Air-operated equipment eliminates hazards and provides variable speeds through air control



CAUSTIC SOLUTIONS safely handled by air mixers in making riboflavin

ice cream, brewery mixing, stirring bleach in vats in sugar plants, mixing milk and cream in tank trucks; in labora-

Uses — These mixers, because of their air operated feature, in addition to meeting requirements imposed by size of container, nature of process and material are safe to use on flammable materials contributing to explosion-proof operations. Numerous food processing applications include soups,



### By CARDOX Fire Extinguishing Systems

One major fire — or a small fire that results in crippling damage by the extinguishing medium — can cut the flow of vital war goods to a trickle over night. Such fires may halt or slow down production on a dozen different types of essential fighting tools . . . waste precious man-hours and critical materials.

Cardox Fire Extinguishing Systems provide distinctive advantages in protecting war-winning production. They smother the fire and "cool out" combustibles through timed mass discharges of pounds or tons — of CO<sub>2</sub> . . . with no damage by the extinguishing medium. Consequently, when fire strikes, men and machines are usually back in production quickly.

Today, the facilities of Cardox are concentrated on two activities: (1) Providing

fire protection for War-Winning Production: (2) Applying the technological knowledge gained here to help industrial, municipal, state and national fire fighting organizations perfect plans to increase the efficiency of fire protection both today and after the war. Write on your company letterhead for Bulletin 16113.

## CARDOX

CORPORATION

Bell Building Chicago, Illinois

District Offices in New York . . . Washington . . . Detroit . . . Cleveland . . . Atlanta . . . Pittsburgh . . . San Francisco . . . Los Angeles . . . Seattle.

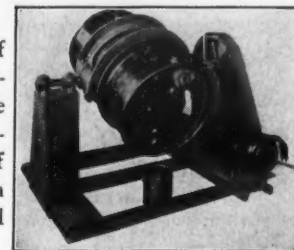
When inquiring specify CP8202 — see information request blank, pgs. 2-3

## DRUM TUMBLING Machine---

Mixes in Suppliers Drums

### Avoids:

The fire hazard of open drums. Contamination of one product with another. Cleaning of equipment between mixes. Residual sludge.

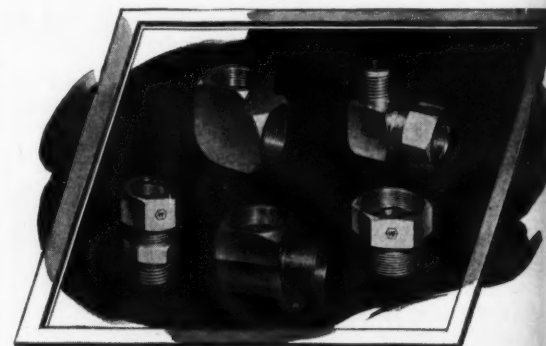


### Assures:

Uniform mix  
Easy inspection during operation  
Withdrawals in any quantity needed  
Portable ramps for fast insertion and removal of containers  
Hand control at motor to place drum in any position

**The VOL-U-METER Company**  
77 Wilbury Place, Buffalo, N. Y.

When inquiring specify CP8203 — see information request blank, pgs. 2-3



### Look ahead with Weatherhead

• Relying upon the Weatherhead mark of quality for accuracy, dependability and ease of installation, automotive, aviation, machine tool, and refrigeration industries are "Looking Ahead With Weatherhead" in today's global warfare as well as the progress which peace will surely bring.

Typical of Weatherhead production for industry are Weatherhead patented inverted, S. A. E., and compression tube fittings for industrial, automotive, and refrigeration installations.

If you use tube fittings or flexible non-metallic hose, write for Weatherhead catalogs, telling us the product you manufacture.

THE WEATHERHEAD COMPANY • Cleveland, Ohio  
Branches: Detroit • Los Angeles • New York • St. Louis



**WEATHERHEAD** WORLD'S LARGEST PRODUCERS OF FITTING AND FLEXIBLE HOSE ASSEMBLIES  
PLANTS IN CLEVELAND, OHIO • COLUMBIA CITY, IND. • LOS ANGELES, CALIF. • ST. THOMAS, ONTARIO, CANADA

When inquiring specify CP8204 — see information request blank, pgs. 2-3



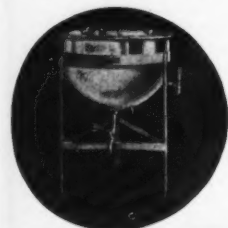


## PROCESSING KETTLES



*Now Serving*  
**OUR**  
**ARMED FORCES**  
*on Every Front*

Resistance to corrosion and metallic contamination . . . stainless . . . easy to clean and keep clean . . . these durable processing kettles are serving in armed forces and essential industries everywhere. Do you have the Lee catalog in your reference files?



**LEE METAL PRODUCTS CO.**  
INCORPORATED  
418 PINE STREET  
PHILIPSBURG, PA.

When inquiring specify CP8205 — see information request blank, pgs. 2-3



**ROBINSON EQUIPMENT**

for the **PROCESSING** of

**CHEMICAL • FOOD • PLASTIC**

**MATERIALS**

**Crushers, Pulverizers, Grinders,  
Reducers, Cutters, Blenders, Mixers,  
Sifters, Attr. & Hammer Mills.**

LITERATURE ON REQUEST  
**MERCER-ROBINSON COMPANY**  
INC.  
30 CHURCH ST. NEW YORK 7, N. Y.

When inquiring specify CP8206 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

## PRODUCTION

tory work and in preparation of specialized products such as riboflavin described and illustrated here.

**Features** — Throttle control regulates speed so that any RPM up to 3200 (without load) can be obtained and held with direct drive models. Geared models operate at lower speeds with increased power. Light weight for easy handling. Quiet operation.

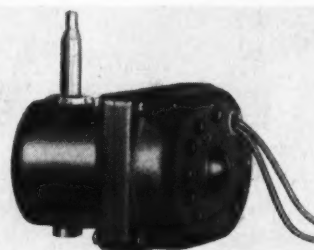
**Description** — Available in wide range of types to meet requirements from laboratory applications to many gallons. In installation illustrated here two type B mixers are installed in tanks of caustic solutions in the manufacture of riboflavin. This is a direct drive portable unit. It has two 5 in. triple blade propellers which are designed so that they will throw toward each other for a more thorough, non-splash mixing. This mixer is well adapted for low to average viscosity materials. Its use in manufacturing riboflavin is one of the more specialized applications where explosion-proof operation is imperative. Riboflavin (Vitamin B<sub>2</sub>) because of its relative scarcity it occupies an important place in official flour and bread enrichment programs. The structure of the riboflavin molecule is extremely complicated. (Its synthesis by Nobel Prize Winner, Paul Karrer, working in close cooperation with Hoffman-La Roche Laboratories is an achievement of modern organic chemistry.) This very long and delicate synthesis, which originally produced only a small fraction of an ounce of riboflavin is now on a tonnage scale at the Hoffman La Roche plant, Nutley, N. J. where the photo shown here was taken. The manufacture of riboflavin, involving as it does the production of large amounts of ribose — hitherto a rare and costly sugar is one of the most difficult industrial syntheses now in use. The mixers are used in step 14 of the process which requires large quantities of inflammable benzol and the greatest precautions must be observed to avoid sparks such as might be generated by electrical equipment. Detailed information regarding this air operated mixing equipment on request.

ECLIPSE AIR BRUSH CO., Dept. CP, 390 Park Ave., Newark, N. J.

When inquiring specify CP8207 — see information request blank, pgs. 2-3

**Constant Speed Motor--Wt. 5 1/2 lbs.**

*Gears are helical cut laminated bakelite for quiet operation*



MOTOR . . constant speed

**Uses** — For a wide variety of applications where a small self-starting constant speed motor is required.

**Description** — Maintains superior speed regulation under wide variations of voltage, load and temperature. Available for operation on one hundred and

ten or one hundred and twenty volts, fifty or sixty cycle source at 14 watts input. Gears are of helical cut laminated bakelite for quiet operation and are completely enclosed and protected. Forced ventilation assures cool operation. Large bearings, ample oil reserve. Dimensions 4 3/8 x 3 1/8 x 3 1/4 inches.

ROTOM MFG. CO., Dept. CP, Alhambra, Cal.

When inquiring specify CP8208 — see information request blank, pgs. 2-3

## It's an engineering fact . . .

**This 9" MULTICLONE TUBE**

**has 8 times the dust separating power  
of a 6 ft. cyclone chamber!**



VG MULTICLONE  
TUBE Cross section  
shows patented  
vane which guides  
incoming gases.

In recovering dusts, fly ash and other suspended particles from gases, it is a basic engineering law that the separating efficiency of a cyclonic collector tube increases as the tube diameter decreases. For example, with the same power expenditure per cubic foot of gas treated, the separating force acting upon a given-sized particle is 8 times greater in a 9 in. MULTICLONE tube than in a standard 6 ft. cyclone chamber . . . 8 times greater cleansing power to throw out extremely fine as well as coarse particles. This is why the MULTICLONE is so highly efficient in recovering ALL types of suspensions, even those of low micron size!

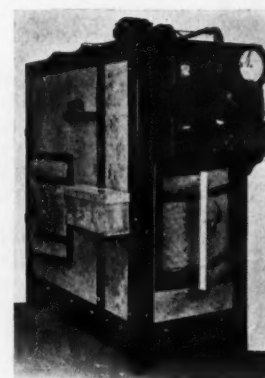
Send for booklet that tells about the many other advantages incorporated in MULTICLONE Dust Collectors.

Let our engineers help you in the efficient solution of your dust recovery problems!



When inquiring specify CP8209 — see information request blank, pgs. 2-3

**First . . Chart**  
**Your Course on a**  
**National**  
**"Modelair"**  
**TEST DRYER**



A small, compact dryer designed to serve three important purposes — (1) to explore the possibilities of improving present production speed or quality without incurring the high costs of such experiments on production equipment; (2) to determine the most efficient operating speed, air velocity, temperatures, etc., before going into full-scale drying of a new product; and (3), for actual production where quantities are limited to the dryer's operating capacity. Accurate control of velocity, humidity, and temperature easily maintained. Designed for either cross or through circulation of the drying medium, depending upon the nature of the material to be dried. Humidifying system and control are optional. Rigid, durable construction, with adequate insulation. Interior readily accessible for cleaning. Unit illustrated occupies floor space 31" x 68" — a typical size. For chemicals, ceramics, food products, textiles and other materials.

Chemical Dryers  
of All Types  
and Sizes



Special Drying  
and Heating  
Equipment

**THE NATIONAL DRYING MACHINERY CO.**  
2709 N. HANCOCK STREET, PHILADELPHIA, PA.

When inquiring specify CP8210 — see information request blank, pgs. 2-3

Page 71

## THE LABOR OF *Saved... 2 PERSONS*

"We saved the labor of two persons and made a very satisfying saving by the use of Silverstitcher."

Gen'l Supt.,  
Chicago Mfr.

## Replace Labor Shortage With ACME Silverstitchers



...AND YOU CAN SAVE MONEY TOO. This improved stitching equipment assures faster, easier box stapling. In some plants, output has been doubled, costs cut and complete satisfaction is the rule where Silverstitcher is in use.

FOR BEST RESULTS, USE ACME SILVER-STITCH STAPLING WIRE. This silvery wire is made in six standard sizes...true to size and temper, provides stitches which clinch tightly and stay that way. Try it on your present equipment.



A SILVERSTITCHER TO SUIT YOUR USE. Sturdily built Silverstitchers are made in various sizes and types to meet your requirements. Many exclusive features mean quiet, trouble-free, speedy operation. Sold under guarantee.

**YOU'LL NEED A PRIORITY** Silverstitchers are available on ratings of A-9 or better when placed in conformity with Limitation order L-83.

**GET THE FACTS . . .** send coupon below for FREE Booklet giving complete details about Acme Silverstitchers.

**ACME STEEL COMPANY**  
2808 ARCHER AVE., CHICAGO, ILLINOIS  
Branches and Sales Offices in Principal Cities

ACME STEEL COMPANY,  
2808 Archer Avenue, Chicago, Illinois  
I'm interested in faster, easier, box stitching at lower cost. Send me FREE Folder with all the facts.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

**FREE!  
MAIL  
COUPON**

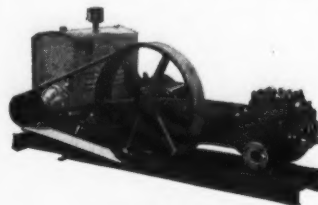


When Inquiring specify CP8211 — see information request blank, pgs. 2-3

## PRODUCTION

### Duplex Side Pot Power Pump

Flanged suction connection on either side; 100 lb. working pressure; interchangeable liners



POWER PUMP

**Uses** — For general use in oil, steel, synthetic rubber and other industries.

**Features** — Easily taken down and assembled. Interchangeable liners give optional capacities and pressures.

**Description** — Duplex side pot power pump, all movable parts totally enclosed. Herringbone gears, Timken bearings, 100 pound working pressure. This pump has a suction flanged connection on either side and double shaft extension. Bearing housing are large to provide easy maintenance. Complete information regarding the adaptability of this unit to specific requirements on request.

LEYMAN MFG. CORP., (McGowan Pump Div.) 18 Central Ave., Cincinnati, Ohio.

When Inquiring specify CP8212 — see information request blank, pgs. 2-3

### Multi-Size Flaring Tool for Thin Wall Steel Tubing 3/16-1/2 Ins.

No vise or hammer necessary; flaring can be done in very close quarters; packed in handy kit

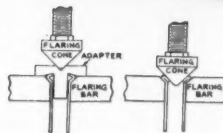


**Uses** — This flaring tool will make correct double flares on all popular sizes of thin wall steel tubing from 3/16 to 1/2 inches for S.A.E. flare and inverted flare joints. It may also be used for making single or double flares on copper or aluminum tubing.

**Features** — Tool insures against cracking or splitting of tubing in flaring because it folds back the end to make a flare with double-thick, double strength walls. Tool is small and convenient to work with, can be used right on the job and handles all the most widely used sizes of tubing — 3/16-1/2 in. O. D. No vise required.

TOOL SIMPLIFIES DOUBLE FLARING . . . of thin wall steel tubing

**Description** — Complete tool consists of flaring bar, yoke and five adapters all furnished in a metal kit. Yoke of tool is made of forged steel and is equipped with a swivel type flaring cone. This type of cone reduces friction when flaring, a particular advantage when working with larger size tubing. When tool is used in very close quarters rod handle can be removed from yoke and a wratchet wrench applied to the 1/4 in. square on the head of the



## GLOBE MIXERS GIVE YOU

*Faster  
Safer  
More Thorough*

**MIXES Wet or Dry**

If you have a chemical or powder mixing problem, you can solve it faster and at less cost with a Globe Tumbling Barrel Mixer. Globe mixers are daily performing hundreds of heretofore costly and hazardous mixing operations economically and safely.

In addition to agitator strips, Globe mixers give you a patented work shifting bottom that generates a sixfold mixing action. Mixing is thorough and rapid. Globe mixers are simple and easy to operate — one unskilled workman can operate several mixers simultaneously.

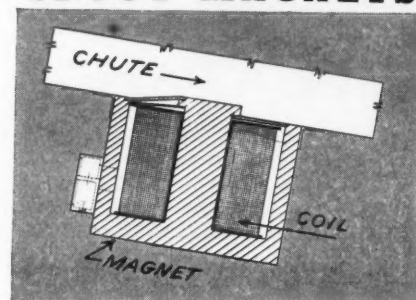
Globe mixers can be obtained with direct motor drive or a special, remote power application in operations where explosives or inflammables demand extreme caution. Globe mixers can be furnished with wood, steel, or non-ferrous mixing drums. Jacketed barrels for heating are also available.

Write Department 143 for complete information.

**The GLOBE MACHINE AND STAMPING CO.**  
1250 WEST 76th STREET CLEVELAND, OHIO

When Inquiring specify CP8213 — see information request blank, pgs. 2-3

## DINGS Double-Gap SPOUT MAGNETS



*afford* Effective, Economical Iron Removal

**DINGS Double Gap Spout Magnets are High Intensity** Separators for removing iron from material passing down a chute. Installed in the chute as shown in the diagram, they hold iron fast below a step in the magnet face. It is practically impossible to dislodge an accumulation of iron until the current is turned off. For automatically discharging the iron an automatic gate can be supplied as an integral part of the magnet. Here's trouble-free, positive, economical tramp iron-removal. Dings also builds a complete line of Magnetic Pulleys and Suspension Magnets. Write for details today.

**DINGS MAGNETIC SEPARATOR CO.**  
510 E. Smith St. • Milwaukee, Wisconsin

**Dings**  
MAGNETIC  
SEPARATION

When Inquiring specify CP8214 — see information request blank, pgs. 2-3



Savings Up To \$100<sup>00</sup>

Per Year Per Pump

Made With

**DARCOVA  
PUMPCUPS**



**Y**OUR reciprocating pumps, new or old, regardless of present packing, will run longer, better, with fewer shutdowns, by installing Darcova Pumpcups. Easy and inexpensive to install, Darcova Pumpcups offer many advantages that no other type of packing can give. Try Darcova Pumpcups and judge for yourself the difference in costs.

**Send for complete information**

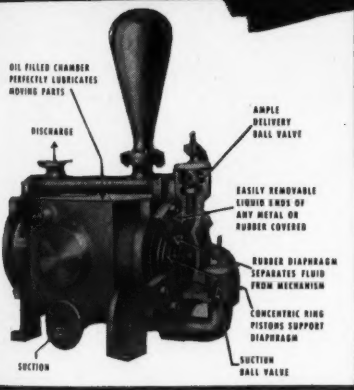
Without obligation we will send complete data and information on Darcova Pumpcups and how they can help you get more for your pumping dollar.



**DARLING VALVE &  
MANUFACTURING CO.**  
WILLIAMSPORT, PA.

When Inquiring specify CP8215 — see information request blank, pgs. 2-3

**Why  
SHRIVER DIAPHRAGM PUMP  
CAN HANDLE  
ANY FLUID**



**No  
Packings  
•  
No  
Leakage  
•  
No  
Corrosion of  
Mechanism  
or Burned  
Out Bearings**

The material pumped — no matter how abrasive, corrosive, viscous or heavy — never gets a chance to injure the moving parts and the liquid ends are made of any metal or with any covering to withstand destruction . . . This double acting, reciprocating pump delivers 1 to 100 g.p.m. at pressures to 100 p.s.i. It's the pump for tough materials and low cost operation. See it at Booth 315. — Get Bulletin 112.

**T. SHRIVER & COMPANY, Inc.**  
846 Hamilton St. Harrison, N. J.

When Inquiring specify CP8216 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

**PRODUCTION**

cone screw. This simple way to double flare thin wall steel tubing is illustrated in the small drawings. Flaring cone is screwed down with proper size adapter in place in the tubing. This bells tubing. Cone is then backed off slightly, adapter removed and cone screwed down just as on conventional flaring tool. The result is an accurate 45 double flare. Bulletin number 337 giving full details is available upon request.

IMPERIAL BRASS MFG. CO., Dept. CP, 1200 W. Harrison St., Chicago, 7, Ill.

When Inquiring specify CP8217 — see information request blank, pgs. 2-3

**Screen System Reproduces  
Product Identifications**

*Trade marks, insignia, lettering, numbers, dials, illustrations remain permanently on wood, metal Uses* — For placing dials, gauges, markings, designs, instructions, trademarks, identification data on any surface quickly and inexpensively. Used on wood, metal, glass, plastics, textiles.

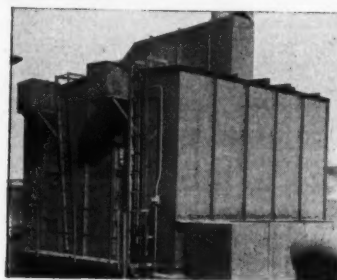
*Features* — Markings are permanent and meet regulations for wear, weather and acid resistance.

*Description* — Screens are available to manufacturers for performing required identification marking service in their own plants. (Service is also available if customer wishes products marked). No special machinery is required to use these screens. Screens can be made from copy large or small. Complete information on request.

MULTI-MARK DIV. (Colonial Process Supply Co.)  
Dept. CP, 134 W. 23rd St., New York, N. Y.

When Inquiring specify CP8218 — see information request blank, pgs. 2-3

**... IF YOU HAVE**



**Dust  
CONSULT**

**DRACCO ENGINEERS**

DRACCO makes a complete line of Filters — to take care of dust from an individual machine or to control dust in an entire plant. Even in small quantities, dust is a costly hazard and should be promptly eliminated. If you have dust in any quantity, why not consult DRACCO Engineers? They have solved dust problems of every description and are well qualified to give you sound advice.

Write for Bulletin No. 302

**DRACCO CORPORATION**

4060 East 116th Street, Cleveland 5, Ohio New York Office, 130 West 42nd Street

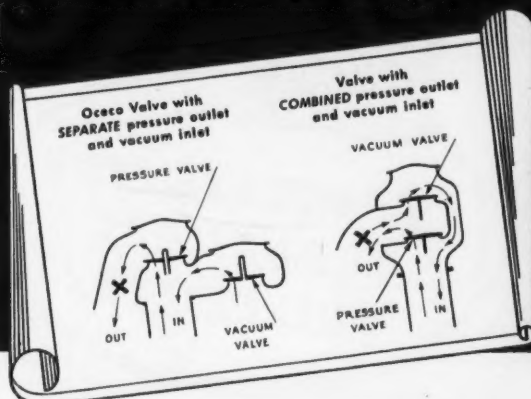
**PNEUMATIC CONVEYORS • DUST COLLECTORS**

When Inquiring specify CP8219 — see information request blank, pgs. 2-3

**OCECO  
VENT  
VALVES**



**with their separate pressure  
and vacuum openings . . .**



**REDUCE THE HAZARD OF FLAMES  
FLASHING BACK INTO YOUR TANKS!**

When vapor passing outward through a vent valve becomes ignited, the flash (if no flame arrestor is used) can pass back into the tank if its velocity is greater than the velocity of the vapor passing outward through the valve. The only positive protection against flash-back is an adequate flame arrestor . . . But if you don't use a flame arrestor be sure to specify an Oceco Vent Valve. It's the next best thing.

As shown by the diagram above, a flash of vapors leaving the tank at point marked "X" in Oceco's separate outlet valve, tends to close the pressure valve without opening the vacuum valve. In the combined outlet valve, the flash has maximum opportunity to open the vacuum valve and find easy entrance into the tank.

Minimized flash-back is only one advantage of Oceco Vent Valves . . . Strong, fire resistant housings — positive venting at the desired pressure and vacuum — and large flow capacity are some of the others. You'll find complete details in our recently completed Catalog V-50 . . . Send for a copy today!

**OCECO**

Division of

**THE JOHNSTON & JENNINGS COMPANY**

868 Addison Road

Cleveland, Ohio

Engineering and Sales Representatives in the Principal Cities

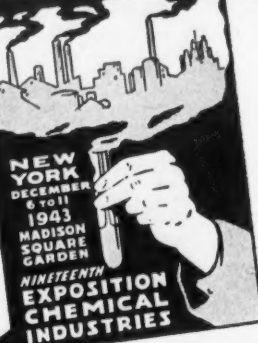
**FIRE PREVENTION AND VAPOR CONSERVATION EQUIPMENT  
FOR VOLATILE LIQUID STORAGE TANKS**

When Inquiring specify CP8220 — see information request blank, pgs. 2-3

Page 73

**BOOTH  
512**

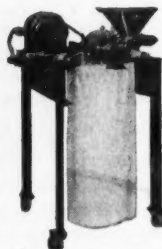
SEE OUR EXHIBIT



**A COMPLETE LINE  
OF DUSTLESS  
PULVERIZERS**

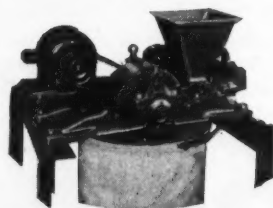


Bantam Mikro-Pulverizer for laboratory and small production.



No. 1SH Mikro-Pulverizer.

No. 2TH Mikro-Pulverizer, guards on drives removed.



**PULVERIZING MACHINERY COMPANY**  
60 Chatham Road • Summit, New Jersey

**MIKRO-PULVERIZER**  
Reg. U. S. Pat. Off.

When inquiring specify CP8221 — see information request blank, pgs. 2-3

## PRODUCTION

### Wax Dipping Tanks In Portable And Large Capacity Models

*Used in providing coatings to metal parts to protect against moisture, bacterial and prolonged storage action*



**WAX DIPPING TANK . .**  
portable type

melted and heated to 250 degrees F in 50 minutes. Larger models employ a "double boiler principle of heating, this indirect method protects against scorching or burning material.

**Description** — Portable model is mounted on four roller casters. It is equipped with an immersion heating element. Plugs in on 110 or 220 v. A.C. or D.C. Other features: Temperatures of wax within the insulated tank may be automatically controlled by a thermostat equipped with a dial and knob to shut off the electric heating element and maintain a temperature of from 100 — 550 degrees F. Built-in thermometer with an indicating range of 100 — 600 degrees F and two wire dipping baskets are part of equipment. The larger liquid tank has a capacity of thirty gallons and is designed for plants that have either city gas or liquefied petroleum gas available. It can also be heated by kerosene. Inner boiler holds wax, outer boiler is filled with approximately thirty-two gallons of high flash heat transferring oil and is filled with an immersion tube heating unit. Complete information regarding both models available on request.

**AEROIL BURNER CO.,** West New Jersey, New Jersey.

When inquiring specify CP8222 — see information request blank, pgs. 2-3

### Sectional Hairpin Heat Exchanger Has Non-Removable End Assembly

*Avoids use of heavy cumbersome members;  
simplifies installation, maintenance and inspection*

**Uses** — For wide range of service in heat transfer applications. For effecting heat transfers between liquids and gases or other commodities having unequal transfer coefficients.

**Features** — Non-removable rear end assembly. Clear unobstructed entrance to exchanger by removing bolts, backing cover plates off to clear plates of adjacent "section", swinging the plate through 180 arc and rebolting it in that

**Uses** — For heating wax compounds that may be used on metal parts and products and packaged products, particularly foods for protection against salt water, high humidity, moisture, prolonged storage and bacterial action.

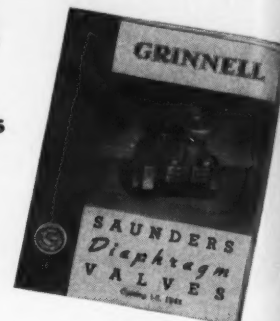
**Features** — Portable model (illustrated) has a completely insulated tank to prevent heat losses to an average hourly temperature drop of approximately 9 degrees F per hour. Seventy-five pounds of solid wax (12 gallons) can be

## GRINNELL-SAUNDERS

### DIAPHRAGM VALVES

for "tough" fluids

from  
**A**cetic acid  
to  
**Z**inc sulphate



Here's the low-down on valves that deliver far better performance for fluids with corrosive properties, high viscosity or suspended solids. Catalog 1-S tells all details of Grinnell-Saunders Diaphragm Valves . . . lists over 100 fluids for which they offer outstanding advantages. Features of these valves include:

1. Resilient diaphragm as closing element . . . no metal-to-metal seats . . . no refacing, reseating or grinding required.

2. Diaphragm completely isolates working parts from fluid. No packing glands to demand attention.

3. Streamlined passage reduces friction to minimum.

4. The valve body — only metal that could contact the fluid — can be lined with glass, porcelain, lead, rubber or other non-corrosive material.

Write today for Catalog 1-S. Grinnell Company, Inc., Executive Offices, Providence, R. I. Branch offices in principal cities.

## GRINNELL

WHENEVER PIPING IS INVOLVED

When inquiring specify CP8223 — see information request blank, pgs. 2-3



**IT'S A  
GROEN  
MIXER TYPE  
KETTLE**

### WITH FULLY ENCLOSED WORKING PARTS

Single or double-motion motor-driven agitators. Motors and gear reducers mounted on steel channel across top of kettle, and fully enclosed for positive sanitation. Kettle interior of Stainless Steel. Exterior of Stainless-clad steel. Used by country's most prominent plants whose products are of a quality requiring strictest safe-guarding. GROEN Kettles do it dependably. Write us on Priority-covered requirements.

**WRITE FOR  
OUR NEW  
KETTLE  
CATALOG**

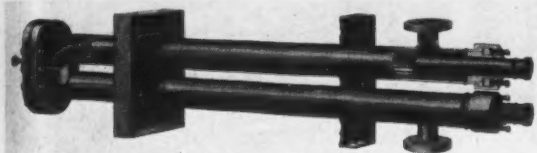
**GROEN MFG. CO.** (HALF A CENTURY OF FINE KETTLES)  
4537 West Armitage Avenue, CHICAGO, ILLINOIS

When inquiring specify CP8224 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## PRODUCTION



HAIRPIN HEAT EXCHANGER designed for easy cleaning

position. This simplifies installation, avoids use of cumbersome members. Contributes to quick, easy cleaning and inspection. Welded one piece hairpins.

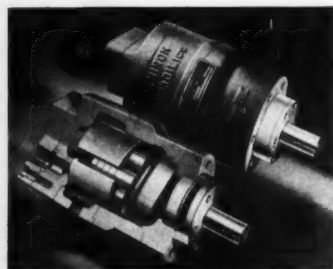
**Description** — Sectional hairpin heat exchangers employ either the maker's "plain longitudinal" or "cut and twisted" fin tubes. Accessibility permits exchanges employing tubes having different ratios of primary to secondary surfaces and different heat transferring capacities be interchanged one for another as desired, so that a single "stand" of these sections featuring these refinements can be used for a variety of different duties. The new head introduced in these exchangers consists of a solid ring and two split collars tightened with cap screws and can be assembled easily with wrench. Construction is said to be capable of holding in excess of 2000 pounds pressure for extended periods without weeping.

BROWN FINTUBE CO., Dept. CP, Elyria, Ohio.

When inquiring specify CP8225 — see information request blank, pgs. 2-3

## Axial-Piston-Type Fluid Motor

*No mechanical linkages; withstands sudden stopping, braking, stepless speed variation*



FLUID MOTOR mounts in any position

**Uses** — Designed to meet requirements for a fluid motor capable of withstanding constant shock loads — loads caused by rapid acceleration and deceleration and rapid reversal of equipment rotating at high speeds. For delivery of rotating power in either direction at various speeds within operating range. For use where rotary oil hydraulic power is indicated whether it be transmitted through gears, pulleys or directly connected.

**Features** — Floating drive design — axial piston type fluid motor in which there are no mechanical linkages or universal type drive rods. Direct connection, constant contact between driving and driven elements. Readily mounted in any position. Fully self-starting.

**Description** — Number of moving parts reduced to a minimum. Modern design and the various mounting plate arrangements which can be utilized make it possible to remove these motors from equipment without disturbing their supply piping. Speed regulating by valving more or less fluid through motor. Model MA-15 CP has maximum recommended pressure of 1000 psi and horsepower output at 100 rpm at 100 pound line pressure — .238. Weight 16.4 pounds.

THE DENISON ENG'G. CO., Dept. CP, Columbus, Ohio.

When inquiring specify CP8226 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943



*This girl is making one of the 480 tests and inspections used to make sure that G-E Mazda lamps stay brighter longer.*

## WARTIME LIGHTING SUGGESTION

**Y**EAR after year, General Electric lamp research has pushed up the efficiency of G-E lamps. Why not get all the benefit of G-E research?

Dust and dirt on lamps and fixtures, plus dark walls and ceilings, can waste as much as half the light you pay for . . . reducing your lighting to the level produced by the lamps of 20 or 30 years ago . . . wasting much of the added light G-E research has given you. Clean your lighting equipment regularly. Wash walls and ceilings, and if you repaint, use light colors. General Electric Company, Nela Park, Cleveland, Ohio.

Hear the General Electric Radio programs: The "Hour of Charm", Sunday, 10 p. m. EWT, NBC; "The World Today" news every weekday, 6:45 p. m. EWT, CBS.

G-E MAZDA LAMPS

**GENERAL  ELECTRIC**

★ THE BEST INVESTMENT IN THE WORLD IS IN THIS COUNTRY'S FUTURE — BUY WAR BONDS ★

When inquiring specify CP8227 . . . see information request blank, pgs. 2-3

# J & C AUTOCLAVE

IMPREGNATING SYSTEMS FOR  
MAGNESIUM CASTINGS, ETC.



Pioneers in the design and manufacture of Autoclave equipment, the Jackson & Church Co. is fully equipped to lay out and build any and all types of impregnating systems. The tank shown here is equipped for either steam or electrical heating and is enclosed in an insulating jacket. Regardless of the materials you wish to impregnate—magnesium castings, aluminum parts, wood, etc.—it will pay you to call in the Jackson & Church experienced engineers.

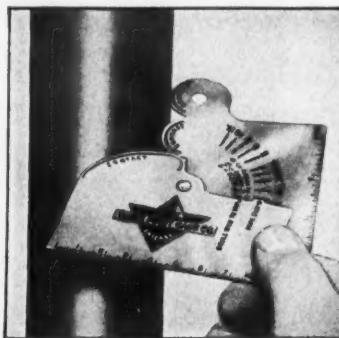
JACKSON & CHURCH CO. • SAGINAW, MICHIGAN

When inquiring specify CP8228 — see information request blank, pgs. 2-3

## PRODUCTION

### All-Metal Pocket Size Pipe Gauge

For pipe  $\frac{1}{8}$  to 12 inches; also indicates drill size for tapping



HANDY PIPE GAUGE

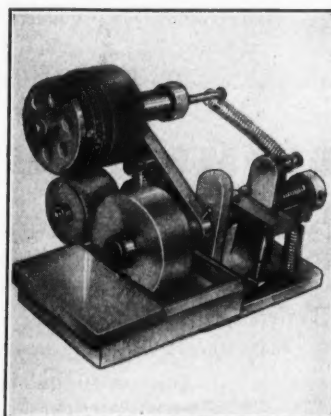
steel plates with edges curved at three points for contact with pipe, together with scale which automatically registers not only the pipe size in terms of inside diameter but the drill size for tapping. Gauge constructed of steel, with deep etched numerals. Size when closed  $2\frac{1}{2} \times 4\frac{1}{4}$  inches.

3-POINT GAUGE CO., Dept. CP, 3821 Broadway, Chicago, Ill.

When inquiring specify CP8229 — see information request blank, pgs. 2-3

### Automatic Printer Marks Objects Of Any Shape On Conveyor Lines

Rotary marker uses rubber, steel type or solid dies — has "knee-action" design



ROLOPRINTER . . . assembly line marking attachment

of this device carries the changeable type and is rotated by contact of its bearer section with the piece being marked. It automatically returns to its starting position by means of eccentric action. The marker (illustrated) imprints below the object as it moves on the conveyor above it. Models can be supplied to mark on top or sides. A novel type of "knee-action" allows the marking roller to follow the curved or odd-shaped contours of the piece it is mark-

Uses — For instantaneous measurement of all pipe sizes from  $\frac{1}{8}$  to 12 inches.

Features — Measures pipe in any position, even against a wall or corner. Also measures covered pipe if a small opening exists where gauge may be slipped in.

Description — Consists of two pivoted

steel plates with edges curved at three points for contact with pipe, together with scale which automatically registers not only the pipe size in terms of inside diameter but the drill size for tapping. Gauge constructed of steel, with deep etched numerals. Size when closed  $2\frac{1}{2} \times 4\frac{1}{4}$  inches.

3-POINT GAUGE CO., Dept. CP, 3821 Broadway, Chicago, Ill.

When inquiring specify CP8229 — see information request blank, pgs. 2-3

Uses — For automatically marking objects of all shapes — square, cylindrical or flat. Marks boxes, cartons with names, letters, numbers identification marks. Marks various products as they come off conveyor lines.

Description — The device is an automatic rotary marker that imprints lettering and marking on products using either rubber, neoprene or steel type or solid dies.

The marking roller of this device carries the changeable type and is rotated by contact of its bearer section with the piece being marked. It automatically returns to its starting position by means of eccentric action. The marker (illustrated) imprints below the object as it moves on the conveyor above it. Models can be supplied to mark on top or sides. A novel type of "knee-action" allows the marking roller to follow the curved or odd-shaped contours of the piece it is mark-

# COMMERCIAL STAMPINGS

Correctly designed and fabricated metal stampings provide superior parts that are usually more economical than parts made by other methods. Commercial is well equipped to furnish formed parts of steel, monel metal, stainless, or copper alloys for chemical manufacturing machinery builders.

Commercial literature regarding Stampings, Tank Heads, and Steel Shapes should be in their files so that they will be familiar with reliable source of supply.

—WRITE FOR LITERATURE—

The COMMERCIAL SHEARING &  
STAMPING COMPANY  
YOUNGSTOWN, OHIO.

When inquiring specify CP8230 — see information request blank, pgs. 2-3

## Tell us Your Material Handling Problem



"HS" Payloader handles over 25 tons of fertilizer per hour

We can quickly tell you what the Payloader will do to reduce your costs

The Hough Model "HS" Payloader has found excellent application in the process industries handling bulk materials with record economy. Typical users include DuPont, Johns-Manville, Virginia-Carolina and General Chemical Company. This compact, powerful unit, with its one-third yard capacity bucket, picks up and carries its loads 100 feet and dumps at the rate of 25 tons or more per hour. It can pass through a standard box car door and quickly unload materials. Engine, transmissions, controls, hoist and bucket are perfectly balanced as to weight, power and maneuverability.

Write for Bulletin 139 and give us details regarding your material handling problems.

THE FRANK G. HOUGH CO.  
Libertyville, Illinois

HOUGH Payloader SHOVELS

When inquiring specify CP8231 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



# RODNEY HUNT

Many Patented  
"SHAP-TITE"  
Constructions

## Super-Strong ROLLS

WOOD, METAL, RUBBER, PLASTIC

Specializing in rolls for 50 years, Rodney Hunt today makes use of new materials and applies patented features of design and construction which make rolls super-strong. Textile, paper and many other industries have ended roll troubles and cut roll costs by standardizing on "Rodney Hunt". Write for Catalog No. 740.

### RODNEY HUNT MACHINE COMPANY

273 MAPLE ST.

ORANGE, MASS., U. S. A.

When inquiring specify CP8232 — see information request blank, pgs. 2-3

### Hendric Mitco Open Steel Flooring

NON-SLIPPING

NON-CLOGGING

LONG LIVED

90% OPEN



Mitco panels are pressure-formed without the use of mechanical locking devices. No rivets or bolts to fail. No welding to cause residual stresses. Only carefully selected square edge steel bars of the correct chemical and physical properties are used. Bearing bars are dovetailed to receive the cross bars. Hundreds of tons of hydraulic pressure force the cross bars into the bearing bars so the metal COMPLETELY FILLS THE DOVETAILS, locking Mitco into an integral unit, protected at this vital point from all atmospheric corrosion, acid fumes and other destroying elements.

### HENDRICK MANUFACTURING COMPANY

Carbondale, Penna.

30 Church Street, New York City

Sales Offices in Principal Cities

Also manufacturers of perforated metals, perforated metal screens and decorative grilles; light and heavy steel plate construction.

When inquiring specify CP8233 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

## PRODUCTION

ing. A simple cap screw adjustment increases or decreases the pressure of the marking roller to afford sharp impressions. Devices are available to mark lettering or other symbols of various types and sizes. Special inks are available for marking metals, plastics, wood. For boxes of various sizes, especially built conveying units complete with automatic marking equipment are furnished to specifications. Standard imprint sizes: 1 x 7 ins.; 2 x 10 ins.; 3 x 18 ins. Complete information regarding this equipment and service for specific requirements is available upon request.

ADOLPH GOTTSCHO, INC., Dept. CP, 190 Duane St., New York, 13, N. Y.

When inquiring specify CP8234 — see information request blank, pgs. 2-3

### Methods for Increasing Production Through Improving Utilization of Manpower, Plant Resources

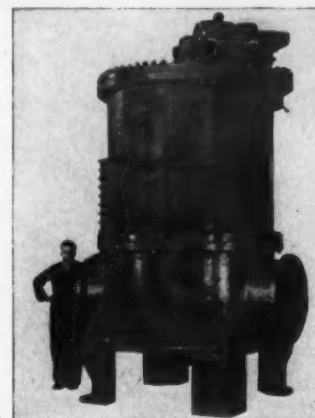
Methods of improving utilization of manpower resources and plant facilities through cooperation between management and labor are outlined in new booklet just issued by industrial management engineers. Sections are devoted to work measurement and production control, method improvement, labor cost and expense control, supervision and indirect labor, planning and scheduling, job evaluation, incentive wage plans and other phases of plant operation. This booklet, entitled "Production Management" is available on request.

BEDAUX CO., Dept. CP, Chrysler Bldg., New York, N. Y.

When inquiring specify CP8235 — see information request blank, pgs. 2-3

## BRASSERT STRAINERS

AUTOMATIC . . . SELF-CLEANING



30" STRAINER

2,000,000 GALLONS PER MINUTE

is the installed capacity of the 400 strainers used throughout industry. Pipeline sizes 3" to 30". Write for descriptive circular.

### S. P. KINNEY ENGINEERS

233 OLIVER AVENUE

PITTSBURGH, PA.

When inquiring specify CP8236 — see information request blank, pgs. 2-3

## Hidden Profits in Chemicals!

FROM LIQUID TO POWDER IN  
ONLY SECONDS WITH BOWEN  
PROCESS OF SPRAY-DRYING



Many problems pertaining to chemicals, foods, plastics, etc. are finding efficient and economical solutions in the BOWEN process of spray-drying. This remarkable process involves the reduction of fluid or semi-fluid substances to powder by instantaneously evaporating moisture from its atomized particles. Solubility is greatly increased, particle size

is controlled, and the product rendered free-flowing. BOWEN spray-drying equipment is designed and engineered to eliminate the use of critical materials in every way possible. The vital need for this advanced process in both essential and semi-essential fields—its efficiency, dependability and uniformity of product—attest to its practicability for your particular endeavor.

## Bowen RESEARCH CORP.

40 MAPLE STREET

GARWOOD, N. J.



PIONEERS IN SPRAY-DRYING ENGINEERING AND DESIGN

Descriptive literature describing the BOWEN process in detail, will be sent promptly on request; write today.

When inquiring specify CP8237 . . . see information request blank, pgs. 2-3



**A Good Place  
to Start  
in Your  
POST WAR  
PLANNING!**

**Install  
or Convert to  
STAINLESS  
EQUIPMENT**

**Costs less than you may think if you specify this Borg-Warner Product**  
IngAcad Stainless-Clad Steel is "A Borg-Warner Product" with a record of more than 10 years of satisfactory service. It sharply reduces material cost, yet gives perfect protection on the side that is used.

Prepare now for the competitive days ahead by improvement of product, lowering of production and maintenance costs through the use of non-corrosive equipment. It will pay you to investigate IngAcad NOW!

**INGERSOLL STEEL & DISC DIVISION**  
**BORG-WARNER CORPORATION**  
310 South Michigan Avenue, Chicago, Illinois  
Plants: New Castle, Ind.; Chicago, Ill.; Kalamazoo, Mich.

**INGACAD**  
STAINLESS-CLAD STEEL

We also produce  
Ingersoll Solid  
Stainless Steel

*"A Borg-Warner  
Product"*

When Inquiring specify CP8238 — see information request blank, pgs. 2-3



The Wahlert carboy drainer is built on scientific lines, designed to prevent accidents caused by splashing and carelessness in pouring into smaller containers. Uninterrupted flow of liquid is assured by the Air Vent which eliminates pumping or syphoning. This vent and the inverted spout are made of hard acid-proof rubber which will stand considerable abuse and the cup is made of soft rubber which allows the drainer to be attached to carboys with slight differences in size of neck. All parts are replaceable.



**MADE IN THREE SIZES**  
5 Gal. Size (1 1/4" to 2 1/8")  
Standard Size (2 3/4" to 3") 10 to 13 Gallon  
Large Size (3 1/4" to 3 1/2") Special Neck  
These dimensions are outside diameter.

Send for literature "CEP"

**WAHLERT PRODUCTS CORP**  
INDUSTRIAL—SAFETY AND FIRE EQUIPMENT  
25 LAFAYETTE ST., BROOKLYN, N. Y.

When Inquiring specify CP8239 — see information request blank, pgs. 2-3

Page 78

## PRODUCTION

### Plastic Lighting Units In Both Semi-Rigid & Close-Up Types

*Urea formaldehyde plastic weighs only one fourth  
that of other reflecting mediums*



PLASTIC LIGHT UNITS

Uses — These plastic lighting units available in two styles offer a selection that will meet a wide range of lighting requirements and save critical materials. For offices, drafting rooms and similar interiors.

**Features** — Reflectors of Plaskon, urea formaldehyde plastic. Weight is approximately one quarter that of other reflecting mediums of comparative size and they are not subject to breakage due to temperature changes. Cleaning the bowl is simple, neither hot nor cold water effects the reflector. Can be cleaned by wiping with damp cloth. Laboratory tests show that there is no deterioration from dust or age.

**Description** — Available in styles illustrated. Close-up unit (center) in reflector diameters of 10 1/2, 16 and 19. Other in 19 in. diameter. Metal parts are of steel finished

Plastic lighting units available in two styles offer a selection that will meet a wide range of lighting requirements and save critical materials. For offices, drafting rooms and similar interiors.

**Features** — Reflectors of Plaskon, urea formaldehyde plastic. Weight is approximately one quarter that of other reflecting mediums of comparative size and they are not subject to breakage due to temperature changes. Cleaning the bowl is simple, neither hot nor cold water effects the reflector. Can be cleaned by wiping with damp cloth. Laboratory tests show that there is no deterioration from dust or age.

**Description** — Available in styles illustrated. Close-up unit (center) in reflector diameters of 10 1/2, 16 and 19. Other in 19 in. diameter. Metal parts are of steel finished



### Faster • Easier to Operate

DEPENDABLE — ECONOMICAL — ACCURATE

### BURGESS "A" TACKER

Fits the hand like a pistol. Drives staples like a machine gun. Adjustable cap to regulate tension. Excellent for holding tags on carboys.

THE BURGESS FASTENING EQUIPMENT DIVISION  
LAKE ERIE CHEMICAL COMPANY

2200 Scranton Road

Cleveland 13, Ohio

When Inquiring specify CP8240 — see information request blank, pgs. 2-3



**POWER  
SPEED-UP**  
*Friction Free*

INSURED BY  
EXCLUSIVE L-R COUPLING PRINCIPLE

**L-R FLEXIBLE  
COUPLINGS**



**NO  
LUBRICATION**

**NO  
TEAR-DOWN for  
CUSHION  
CHANGE**

L-R TYPE W  
Pat. & Pats. Pend.  
For 2 to 2500 h.p.

**NO  
WHIP NOR  
CHATTER**

**MORE POWER for CHEMICAL AND PROCESSING PLANTS**

Every load on free-floating cushions hung between rugged jaws and held by removable steel collars or retainers. INTERNAL FRICTION ELIMINATED. Correction of misalignment, freedom from whip or backlash, positive at any speed.

Send for Catalog and FREE Selector Charts

L-R Types and sizes for every duty, 1/6 to 2500 h.p. Charts help you quickly find couplings you need. Write

**LOVEJOY FLEXIBLE COUPLING CO.**  
4967 WEST LAKE STREET  
CHICAGO, ILL.

When Inquiring specify CP8241 — see information request blank, pgs. 2-3



ROBINSON EQUIPMENT

for the **PROCESSING** of

**CHEMICAL • FOOD • PLASTIC**

**MATERIALS**

**Crushers, Pulverizers, Grinders,  
Reducers, Cutters, Blenders, Mixers,  
Sifters, Attr. & Hammer Mills.**

LITERATURE ON REQUEST

**MERCER-ROBINSON COMPANY**  
INC.

30 CHURCH ST.

NEW YORK 7, N. Y.

When Inquiring specify CP8242 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## PRODUCTION

in gray synthetic enamel, infra-red baked. Surface brightness of bowl extremely low. Wattage up to 750 watts in the Commander semi-rigid types, to 500 in close-up units. Literature on request.

F. W. WAKEFIELD BRASS CO., Dept. CP, Vermillion, Ohio.

When inquiring specify CP8243 — see information request blank, pgs. 2-3

### Transmission for Motorizing Lathes, Milling Machines, Drills, Die Cutters

Transmissions for motorizing lathes, milling machines, shapers, turret lathes, radial drills, slotters, bolt cutters, gear cutters, die sinkers, boring mills are illustrated in four page folder. Features include: one conveniently located lever (automotive shift type) four speeds forward and reverse; gear ratios 1; 1, 2; 1, 3; 1, 4; 1. Models for one to five horsepower; five to ten horsepower and up to thirty horsepower. Folder available on request.

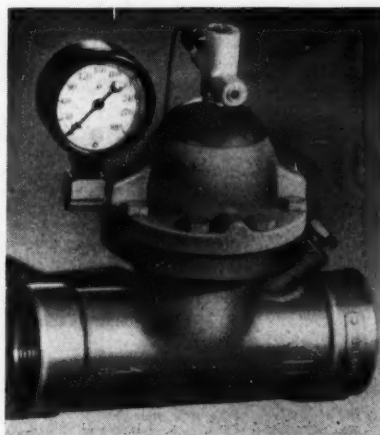
WESTERN MANUFACTURING CO., Dept. CP, 3400 Scotten St., Detroit, Mich.

When inquiring specify CP8244 — see information request blank, pgs. 2-3

### Automatic Stop Valve for Gas, Air Pressure Lines Has Wide Range

*Guards against explosions, loss of required system pressure; operates on rate of flow differential pressure or direct static line pressure*

**Uses** — Designed for use on air or gas pressure lines, where there is any possible danger of fractures or leakage resulting in pressure loss damage. For lines carrying gas at high pressures where a large volume of escaping gas might create a fire or explosion hazard in addition to losing required system pressure. On gas lines carrying fuel to boilers, ovens, furnaces.



STOP VALVE . . can be set at any pressure within wide range

**Features** — Stop point is established by merely presetting the desired shut-off pressure in the dome. Flow automatically shut off when pressure falls to preset point. It must then be manually reset before the flow is permitted to be resumed.

**Description** — Can be operated on rate of flow differential pressure or on direct static line pressure. Wide rangeability — a 300 pound valve may be set to operate at any pressure from five to 300 pounds. Complete details available upon request.

GROVE REGULATOR CO., Dept. CP, 65th & Green Sts., Oakland, 8, Cal.

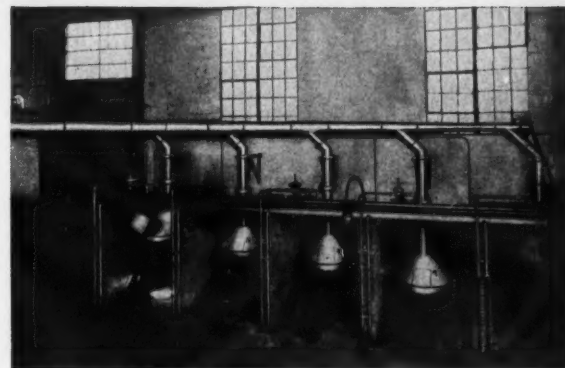
When inquiring specify CP8245 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

## All Dust and Fume Problems Are Alike to Schneible.....

— alike in the fact that Schneible Multi-Wash Equipment can liquidate the problem — different, of course, in the nature of the dust and fumes encountered, and possibly in the equipment and the working medium required. Schneible engineers have repeatedly demonstrated their ability to adapt standard equipment to the successful control of any contaminated air condition found in process plants.

In a Mid-Western varnish plant, pigment dust from the handling and mixing operations created a health hazard and had a



serious effect on the working efficiency of the personnel. This float dust was also damaging to the machinery, especially bearings. A 2,500 c.f.m. Schneible Multi-Wash Collector was installed, and pigment dust no longer contaminates the air of this plant.

Pictured is Schneible equipment which overcame comparable conditions in a large printing ink plant. Here a plant and community nuisance was eliminated, and valuable oils exhausted from the kettles were recovered.

Schneible Multi-Wash Dust Collectors are preferred throughout the chemical industry because they definitely overcome all dust and fume conditions, because they provide for product recovery and because they operate indefinitely with minimum attention and maintenance. *Only water, or some other washing liquid, is used over and over again in the collector system.* The collectors have no moving parts—nothing to break, burn, clog or rapidly wear.

Let us send you complete information.

**CLAUDE B. SCHNEIBLE CO.**  
3961 Lawrence Ave., Chicago

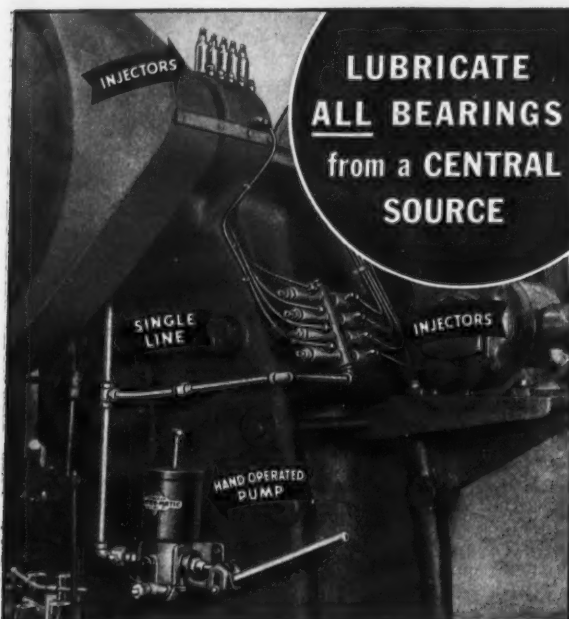
Engineering Representatives in Principal Cities



# SCHNEIBLE

DUST, ODOR AND FUME CONTROL EQUIPMENT

When inquiring specify CP8246 . . . see information request blank, pgs. 2-3



**LUBRICATE  
ALL BEARINGS  
from a CENTRAL  
SOURCE**

**Avoid Bearing Failures...Maintain  
Production for Victory!**

★  
**Equip your machinery with**

**LINCOLN  
CENTRO-MATIC**

**LUBRICATING EQUIPMENT**

The Lincoln method of lubrication provides a simple, practical means of delivering lubricant to all bearings of a machine, or group of machines, from a central source—without stopping machines.

A Centro-Matic System consists of a number of Centro-Matic Injectors—one for each bearing—and a power operated or a hand operated Centro-Matic Pump. A power operated system can be either time clock control or push button control... The injectors can be grouped in manifold or located separately at each bearing. In either arrangement only a single lubricant supply line is required... Easily installed on new or old machines. Write for details.



**The ARMY-NAVY PRODUCTION AWARD**  
for high achievement in the production of war equipment, conferred upon the Lincoln Engineering Company has had a star added. This star symbolizes 6 more months of exacting service to our Armed Forces, delivering vital materials so necessary for ultimate Victory.

FOR VICTORY—BUY U. S. WAR BONDS and STAMPS 143-45

**LINCOLN ENGINEERING COMPANY**  
PIONEER BUILDERS OF LUBRICATING EQUIPMENT  
5701 NATURAL BRIDGE AVENUE, ST. LOUIS 20, MO., U. S. A.

When inquiring specify CP8247 — see information request blank, pgs. 2-3

**PRODUCTION**

**Non-flammable Koroseal Sponge  
Resists Oil, Oxidation**

*Available for essential applications; made in various densities and pore sizes*

**Uses** — Wide industrial applications where the properties and service of sponge rubber is indicated. In use for some time in meeting various military requirements such as crash padding in tanks, helmets and similar instances.

**Features** — Non-flammability in character. Resistance to oils, chemicals, oxidation.

**Description** — This sponge made from plasticized polyvinyl chloride (Koroseal) cannot be vulcanized like rubber so an entirely new technique, using a synthetic ingredient was devised to make the sponge. It can be made in various densities and pore sizes.

B. F. GOODRICH CO., Dept. CP, Akron, Ohio.

When inquiring specify CP8248 — see information request blank, pgs. 2-3

**Conveying, Hoisting, Storing Equipment**

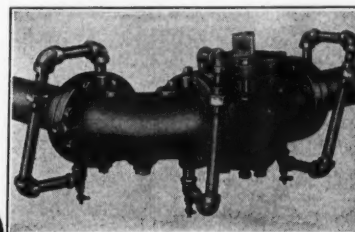
Machinery and equipment for conveying, hoisting, storing, crushing, sizing and distributed is listed and described in two-color illustrated bulletin. Numerous photos show typical applications and emphasize operating features. The back of the bulletin contains a comprehensive listing and description of equipment produced and includes belt conveyors, bucket elevators, chutes, idlers, crushers, foundry shakeouts, vibrating screens, skip hoists and winches.

ROBINS CONVEYOR INC., Dept. CP, Passaic, N. J.

When inquiring specify CP8249 — see information request blank, pgs. 2-3

**Maintain Proper Temperature  
—Keep Heating Element Out of**

**Your  
PROCESS  
PIPES with**



**JACKETED PIPE  
and FITTINGS**

There are no "cold-spots" in H & B Jacketed Pipe Systems. The jackets go to the flanges on both pipe and fittings—preventing heat losses and maintaining proper temperatures. The jump-over pipes (see illustration above) prevent the heating element from entering the process pipe.

Other distinctive features of H & B jacketed systems are drain plugs for any mounting position, and valves of plug cock type, with special provisions for maintaining proper tension—without binding. Write for complete information.



All H & B Fittings are double walled

**HETHERINGTON & BERNER INC.**  
711 Kentucky Ave., Indianapolis, Indiana

**Hetherington & Berner**

When inquiring specify CP8250 — see information request blank, pgs. 2-3

**CUT THE  
"BABY LIGHTNING" HAZARD**

**improve  
working comfort,  
with**

**ARMSTRONG  
HUMIDIFICATION**



**GOOD NEWS FOR PLANTS**  
that have fire hazard due to static electricity ("baby lightning"): you can get rid of this and also improve human working comfort by installing Armstrong Steam-Type HUMIDIFICATION. You also end other dry-air evils due to winter heat, such as fiber breakage, paper shrinkage, warpage and slacking of wood, etc. In offices, HUMIDIFICATION raises personal efficiency, cuts winter colds, improves paper handling.

Simple, practical, quiet, high capacity; connected to steam lines like a unit heater. As low as \$100 for 40,000 cu. ft. capacity. Used in hundreds of leading plants. Nothing like it on the market. Ask for literature.

**Armstrong Machine Works**  
880 Maple St., Three Rivers, Mich.



When inquiring specify CP8251 — see information request blank, pgs. 2-3

**PULMOSAN  
RESPIRATORS**

American Locomotive Co. Photo

**FOR EVERY BREATHING HAZARD**

Pulmosan Respirators embody every essential for efficient protection of your workers, namely: Safety — comfort — light weight — easy breathing — easy cleaning — serviceability. If you have breathing hazards in your plant — whether dusts, fumes, gases, smoke or spray mists — you will find the correct respirator in the comprehensive line of Pulmosan Respirators. Consult us on any breathing hazard. Ample stocks assure prompt delivery. Send for literature showing full line of Pulmosan Respirators.

**Pulmosan Safety Equip. Corp.**  
Dept. EP, 176 Johnson St., Brooklyn 1, N. Y.

When inquiring specify CP8252 — see information request blank, pgs. 2-3



## Neoprene Stanzoils

for longer lasting hand safety  
in  
oils,  
acids,  
caustics



They stand up 3 to 7 times longer than rubber gloves, according to many reports—because Stanzoils are made of Du Pont's extraordinary synthetic, neoprene, which resists damage from harmful industrial fluids and materials. Also Stanzoils do not cause dermatitis sometimes caused by some other gloves. . . All these save you expense, lost production from valuable hands, costly disability claims. . . Standard styles and sizes, black or white. . . Write at once for information and delivery data to



Synthetic Rubber Division  
**THE PIONEER RUBBER COMPANY**  
239 TIFFIN ROAD, WILLARD, OHIO  
Los Angeles • New York

**MADE WITH DU PONT NEOPRENE**

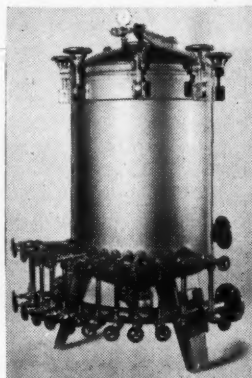
When inquiring specify CP8253 — see information request blank, pgs. 2-3

## FILTRATION PROBLEM Solved . . .

. . . with

### NIAGARA FILTERS!

"— we are satisfied with the performance of your NIAGARA Model 108 Filter (illustrated to right, note individual leaf outlets) . . . we are placing our order for a duplicate . . . this filter is handling 6000 GPH of Formaldehyde . . . and giving excellent results —"



**HEYDEN CHEMICAL CORP.**  
Garfield, New Jersey

### NIAGARA FILTER SYSTEMS offer you —

- ★ **ENCLOSED FILTRATION:** safeguard against explosive or inflammable liquids, fumes, product contamination
- ★ **RAPID CLEANING:** 90% of all installations can be cleaned, reset in 15 minutes, ready to use
- ★ **COMPACT INSTALLATION:** maximum space required is about 1/3 that of old plate and frame presses

OUR ENGINEERING DEPT. will tell you many other reasons why you should install NIAGARA FILTERS today — Free, 20 page, 4-color catalogue, yours for the asking!

3080 MAIN STREET **niagara filter** TELEPHONE  
BUFFALO 14, NEW YORK CORPORATION AMHERST 2100  
FILTRATION ENGINEERS TO THE PROCESSING INDUSTRIES

When inquiring specify CP8254 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

## PRODUCTION

### Illuminated Grinder Shield

*Plastic frame, non-shatterable glass, vibration resisting lamps; speeds work, protects worker*

**Uses** — Provides properly directed light and protection for the face and eyes of workers engaged in grinding operations.

**Features** — Frame molded from high impact resisting plastic material. Electrical parts are in a completely insulated chamber and mounted on an adjustable bracket. **Description** — The light, controlled by push button switch, is focused right on the work and provides excellent visibility for more accurate and rapid work and decreases hazards of hand injuries. The window is of non-shatterable glass and the lamps of the bayonet type are vibration resisting and are set-in flush with the frame. Unit harmonizes with modern machine tool equipment.

BOYER-CAMPBELL CO., Dept. CP, 6540 Antoine St., Detroit, Mich.

When inquiring specify CP8255 — see information request blank, pgs. 2-3

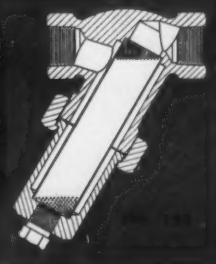
### Electric Gauges

"Twenty-one Electric Gauges to Aid Production," is the subject of an eight page article reprint. The booklet describes the functions of the twenty-one gauges and contains a chart showing schematic representations of electric gauge circuit applications. Gauges described include magnetic, electromagnet, pressure, strain, eccentricity. Booklet GEA 3991 on request.

GENERAL ELECTRIC CO., Dept. CP, Schenectady, N. Y.

When inquiring specify CP8256 — see information request blank, pgs. 2-3

## TRAP THAT DIRT



**Saves money**  
**IN PROTECTION OF TRAPS,**  
**PRESSURE REGULATORS, PUMPS and VALVES**

Wherever delicately adjusted working parts may fail to function properly because scale, dirt or foreign matter may impede their action, install Edward strainers. Note large screen capacity of Fig. 128 above, and free flow design, definitely minimizing pressure loss. For use in either vertical or horizontal pipe lines and easily disassembled for cleaning.

Write for free Catalog 101 today!

**THE EDWARD VALVE & MFG. CO., INC.**  
1230 WEST 145th STREET • EAST CHICAGO, IND.

## Edward Valves

Forged Steel & Cast Steel

When inquiring specify CP8257 — see information request blank, pgs. 2-3

## The DRYERS that will give the greatest satisfaction

and prove the best investment in the long run are not "just cylinders of metal." They are "highly scientifically designed pieces of equipment" — the designs that have been imitated to a flattering degree.

**L. R. CHRISTIE CO., 17 E. 42nd ST., NEW YORK, N. Y.**

**Rotary Dryers  
Rotary Retorts  
Coolers**

possess economical and production advantages unobtainable in any other equipment.

*Write for interesting literature*

When inquiring specify CP8258 . . . see information request blank, pgs. 2-3



FOR STANDARD  
HIGH HEAD SER-  
VICE. Types T and  
XT. Capacities  
Up to 150 G.P.M.  
or 200 lbs dif-  
ferential pressure.

FOR HIGH TEMPERATURES  
up to 510° F. Types PT and  
PXT. Cradle mounting, stuffing  
box, and ball bearings all  
water cooled. Capacities. Up  
to 150 G.P.M. or 175 lbs.  
differential pressure.

## Quick Facts

### DAYTON DOWD about TURBINE PUMPS

**HIGH PRESSURES IN SINGLE STAGE** — Regenerative principle of this pump enables its single, multivaned impeller, operating at normal speeds, to develop very high pressure in single stage.

**LOW NPSH REQUIREMENT** — Lower pressure drop (suction loss) is an outstanding turbine pump characteristic. This characteristic assures satisfactory operation under minimum head conditions.

**ONE LOW-PRESSURE STUFFING BOX** — Subjected to suction pressure only — never to discharge pressure. Minimizes chance for leakage. Ideal for volatile liquids.

**SELF-PRIMING . . . HANDLES VAPOR WITH LIQUID** — Pump keeps its prime after initial start. Gradual increase in pressure from inlet to discharge minimizes possibility of vapor-locking.

**CRITICAL METALS MINIMIZED** — Only a small casing, two sideplates and the impeller comprise the pump-end. Saves on critical metals. Lowers cost of corrosion-resisting construction.

**ONLY 1 ROTATING PART . . . NO FRICTIONAL CONTACT** — Single impeller rotates freely without wear from metal-to-metal contact.

**PERFECT HYDRAULIC BALANCE** — Liquid is delivered equally to both sides of impeller through twin inlet openings. Eliminates thrust on ball bearings.

**LOWER COST STAND-BY PROTECTION** — Wearing surfaces are all incorporated in side-plates and impeller. Extra set affords stand-by protection at nominal cost.

**Free TURBINE PUMP DATA BOOK**  
144 pages of illustrations, performance  
curves, selection tables, installation and  
operating information on turbine pumps.  
Write on your business letterhead for  
your FREE copy today!

**DAYTON-DOWD**  
COMPANY  
QUINCY, ILLINOIS

Offices in Principal Cities

**TURBINE AND CENTRIFUGAL PUMPS**

When inquiring specify CP8259 — see information request blank, pgs. 2-3

Page 82

## PRODUCTION

### Buoyancy-Type Instrument Both Controls & Indicates Liquid Level

*Torque tube transmits level changes; for specific  
gravities between .2 and 2.0; available in  
numerous standard ranges*



TORQUE TUBE . . . transmits level  
changes

**Uses** — This buoyancy-type instrument is designed to both control and indicate liquid level.

**Features** — Torque tube transmits the level changes to the instrument mechanism. This eliminates stuffing box with its need for lubrication or packing and gives a closed system which eliminates leakage.

**Description** — The control mechanism employed provides completely adjustable sensitivity for smooth throttling level control or automatic reset for averaging of liquid level with a minimum of disturbance to the process. A torque tube transmits the level changes to the instrument mechanism. It is interchangeable with that used in the maker's Aneroid manometer. There are no internal pivots



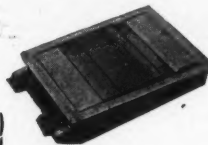
NIAGARA GYRO-WHIP SIFTER

### High-Speed SIFTERS

- GYRO-LAB
- GYRO-WHIP
- SUPER

CHEMICALS, POWDERS, GRAINS, ETC.  
POUNDS TO TONS CAPACITY PER HOUR.  
2 TO 250 MESH, MULTIPLE SEPARATIONS.  
SMOOTH — QUIET — MODERN — EFFICIENT.

### ALNICO PERMANENT MAGNETS



(SPOUT OR CHUTE TYPE)  
CLASS "A" RATING FROM  
FIRE UNDERWRITERS.  
REMOVE TRAMP IRON — GUARD YOUR  
PRODUCTS — PROTECT VITAL MACHINES —  
PREVENT FIRE AND EXPLOSION.

Richmond Mfg. Co.

LOCKPORT, N. Y.



When inquiring specify CP8260 — see information request blank, pgs. 2-3

## FOR FASTER BETTER PROCESSING

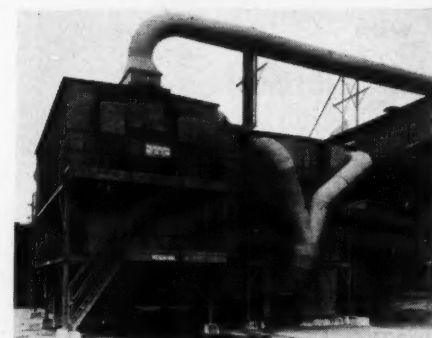


## Modern INTERNATIONAL PEBBLE & BALL MILLS

If you Grind, Mix or Process Chemicals, Ceramics, Food Products, Drugs, Inks, Paints or Minerals, investigate what INTERNATIONAL has to offer in Equipment for INCREASED PRODUCTION and LOWER COSTS — Write or Wire for Catalog and complete information today.

**INTERNATIONAL ENGINEERING, INC.**  
DAYTON, OHIO

When inquiring specify CP8261 — see information request blank, pgs. 2-3



## DUST PROTECTION!

● If you are pressed for room—yet need more dust protection in your plant — Pangborn Dust Control Engineers are prepared to give you recommendations that will take advantage of unused or waste plant space. Like the imposing installation above—your system will be satisfactory from every point of view—engineering, erection, operation and maintenance.

"COME TO PANGBORN"

**PANGBORN**  
WORLD'S LARGEST MANUFACTURER OF DUST COLLECTING AND FLASK CLEANING EQUIPMENT  
PANGBORN CORPORATION . . . HAGERSTOWN, MARYLAND

When inquiring specify CP8262 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## PRODUCTION

to cause friction or wear. This "Level-Buoy" handles liquids with specific gravities between .2 and 2.0. It is available in the following standard ranges: 14, 32, 60, 72 and 120 inches.

TAYLOR INSTRUMENT CO'S., Dept. CP, Rochester, N. Y.

When inquiring specify CP8263 — see information request blank, pgs. 2-3

### The Amplidyne — How it Overcomes Short Circuit as a Trouble Maker and Puts it to Work

The amplidyne, an engineering development which harnesses the usually troublesome short circuit and puts it to work is described and illustrated in an attractive thirty-six page bulletin. Engineering details and fundamental functions are dealt with. In principle the device is an externally driven generator which uniquely uses a short circuit and a compensating winding. Numerous applications are listed and in some instances figures are cited to show gains in production levels made through use of the amplidyne. The final section is devoted a series of diagrams, with explanatory notes, showing how the device is employed in conjunction with other equipment in various applications. Bulletin GEA-4053 on request.

GENERAL ELECTRIC CO., Dept. CP, Schenectady, N. Y.

When inquiring specify CP8264 — see information request blank, pgs. 2-3

### Drive Wheels, Power Unit of Ton Hydraulic Truck Rotate 360°

Continuous operation at  $\frac{3}{4}$  load for 4 hrs. on 2 qts. gasoline; unit weighs 800 lbs.

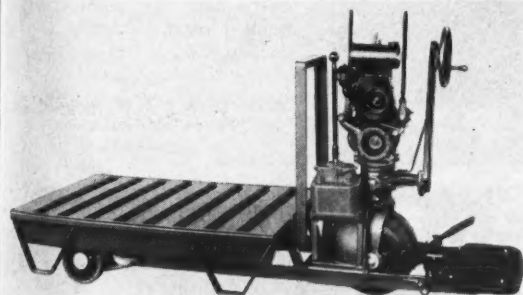
Uses — For wide application as a floor truck — for use with any standard  $9\frac{1}{2}$  or 10 in. skid that is 30 in. between the legs.

Features — Provides rapid, easy handling of small as well as large loads. Truck weighs only 800 pounds. Adjustments quickly made from outside.

Description — One ton capacity. Turning radius 82 inches. Motor  $1\frac{1}{2}$  HP. (aircooled), 4 cycle. Drive wheels and power unit rotate 360 degrees allowing operation in any direction. Makes use of service tested units produced in great volume to permit low cost. Motor can be replaced in ten minutes by removing four bolts. Spare motors at low cost and complete overhaul service available in most cities. Wheel base 54 in., brakes, (two) on load wheel, v-belt type, 6 in. diameter. Foot pedal control. Illustrated bulletin describing the "Truck-man" on request.

YARD-MAN INC., Dept. CP, Jackson, Mich.

When inquiring specify CP8265 — see information request blank, pgs. 2-3



LIGHT FLOOR TRUCK MANEUVERS EASILY

NOVEMBER - DECEMBER, 1943

... For any pipe to 4"

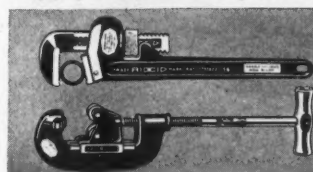


Cuts pipe if there's room for a quarter turn.

### New Type **RIDGID** CUTTER with 4 cutting wheels

WHEN you have pipe to cut in close quarters, in a trench, near a wall or other pipes it's easier with this new **RIDGID** Heavy-Duty Cutter. The handle is short; and you use four heavy-duty cutting wheels that roll right through pipe up to 4" with a minimum of burr. The tough malleable frame holds perfect alignment, always cuts true. Comes in two sizes — No. 42, and No. 44. For tight-spot pipe cutting... ask your Supply House for the new **RIDGID**s.

Buy **RIDGID** Pipe Tools at Supply Houses Everywhere

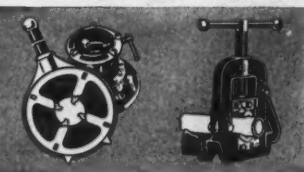


**RIDGID**

★ PIPE TOOLS ★

Fast-Working Tools for War... and the Busy Peace that's Coming

THE RIDGE TOOL COMPANY  
ELYRIA, OHIO, U.S.A.



Instant  
Workholder  
Setting

### Nearest thing to an automatic 1" to 2" PIPE THREADER self-contained **RIDGID** No. 65R

Sets to size  
in 10 seconds

YOU set it to thread 1",  $1\frac{1}{4}$ ",  $1\frac{1}{2}$ " or 2" pipe by a simple 10 second adjustment. You set the mistake-proof workholder to pipe size by an instant turn of the gauge ring, tighten only one screw — no bushings needed. It's almost automatic. No extra chaser dies to carry around — one high-speed steel set stays in the die stock, cuts micrometer perfect threads on all four sizes of pipe with easy ratcheted strokes. Steel and malleable durability. For smooth speedy and easy threading... ask your Supply House for this self-contained **RIDGID** No. 65R.

When inquiring specify CP8266 . . . see information request blank, pgs. 2-3

# NEW CHART

**Paint Spraying Rules**

**How to**

Save Paint	1.7, 11, 12, 13, 14, 15, 16, 17
Save Air	1.7, 11, 12, 13, 14, 15, 16, 17
Save Power	1.7, 11, 12, 13, 14, 15, 16, 17
Save Fuel	1.7, 11, 12, 13, 14, 15, 16, 17
Reduce Equipment	1.7, 11, 12, 13, 14, 15, 16, 17
Reduce Loss of Time Through Accident or Sickness	1.7, 11, 12, 13, 14, 15, 16, 17
Reduction in Sickness	1.7, 11, 12, 13, 14, 15, 16, 17

**Eclipse**  
AIR BRUSH COMPANY, INC.  
200 Park Avenue, Newark 7, New Jersey

## ECLIPSE AIR BRUSH CO., INC.

393 Park Avenue, Newark 7, New Jersey

**ECLIPSE**

When inquiring specify CP8267 — see information request blank, pgs. 2-3

**DUST THE BREEDER OF ABSENTEEISM**

**Parsons VAL BAG DUST ARRESTORS**

**CHANGE the PICTURE**

Statistics prove that back of most absenteeism in plants is sickness and back of most of the sickness is factory dust and dirt. Proper dust arrest-dust means Parsons Oval Bag dust arrestors, will instantly cure most of the present day absenteeism and along with that increase your production beyond the present peak. Parsons Oval Bag dust arrestors, modern in every respect and equipped with many exclusive features afford not only employee protection but protection for plant equipment and buildings. Why not call in a Parsons engineer to check into your dust problem, no obligation whatever. Write and we will be glad to send you a copy of our dust control bulletin "Mastery of the Air," it's free.

**PARSONS ENGINEERING CORP.**  
2545 EAST 79th STREET • CLEVELAND, O.

When inquiring specify CP8268 — see information request blank, pgs. 2-3

Page 84

## PRODUCTION

### Twin Contact Heat Sealer

Seals overlapping and pin seal sausage bands and may also be used for various sealing jobs



CONTACT HEAT SEALER

**Uses** — For a wide variety of sealing operations such as heat sealing pliofilm, small pouches; especially adapted to sealing overlapping sausage bands and

may be used in packaging frozen foods.

**Description** — Electrically operated 110 volts AC or DC made in two models — nine ounces and eleven ounces in weight. In application to sealing sausages the operator wraps the band around sausage with ends extending and places the ends of the band between contact arm and heater tube and then pulls. The ends of the band slip under the contact arm and are held against the heater tube for a fraction of a second. Complete information on request.

SPEED SEAL MACHINES, Dept. CP, Oshkosh, Wis.

When inquiring specify CP8269 — see information request blank, pgs. 2-3

### Fluorescent Extension Cord Unit

Provides cool, glare-free illumination in inaccessible places; compact, light weight

**Uses** — To provide extension cord unit service with the additional advantages of fluorescent light.

**Features** — The unit uses the small 6 watt fluorescent lamp which provides a very adequate amount of cool, glare free illumination in tight, hard-to-get at places. Cool operation contributes to user's comfort. Reflector shield eliminates danger of eye fatigue. Protective grill prevents lamp and socket breakage. Lamps quickly changed.

**Description** — Overall length — 10 1/4 inches — width 13/16 — height 1 7/8 inches. Weight including ballast 2 1/2 pounds. Small manual starting switch. Ballast is remotely mounted. Operating voltage 110-125 volts, 60 cycle, AC only. Total wattage including lamp and auxiliary — 8 watts. Complete with 12 feet of two-wire cord. Identified as unit P-7.

SYLVANIA ELECTRIC PRODUCTS INC., (Fixture Div.) Ipswich, Mass.

When inquiring specify CP8270 — see information request blank, pgs. 2-3



SERVICE LIGHT, 6 w; lamp, remote ballast

**Mary Jones**  
**DOES A 2-MAN JOB!**



Closing filter presses used to be a two-man job. But no longer!

The Sperry EHC electric closing device ends this labor bottleneck—allows one woman operator to handle the job easily and quickly. Manual adjustment at only two places permits full control of the largest press by women operators, releasing workmen for other duties.

In addition, the Type EHC Closing:

1. Speeds filter cycle.
2. Reduces wear on filter cloths.
3. Minimizes operating hazards.

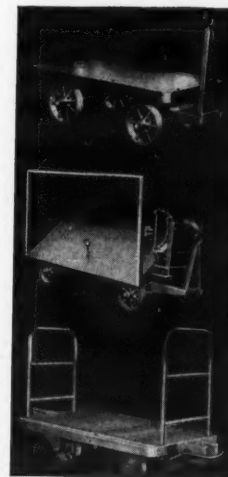
The type EHC closing can be applied to your present filter presses without extensive alterations. For Sperry presses, only removal of the cross head is necessary. Phone or write for complete information.

## D. R. SPERRY & COMPANY, Batavia, Ill.

Filtration Engineers for Over 46 years

When inquiring specify CP8271 — see information request blank, pgs. 2-3

**RAW MATERIALS IN-OUT.**  
**Quicker-Easier-Safer!**



• EWC Materials Handling Equipment is engineered for the job—backed by many years of experience in meeting handling needs. Today, when speed is doubly important to help America's fighters, EWC Trailers—in standard designs or with special features—are serving in Production Plants everywhere. To plan your hauling most efficiently, let us help you.

Write Dept. C. P. for Bulletin, Prices, and Helpful Suggestions.

**EWC TRAILERS**  
Electric Wheel Co., Quincy, Ill.

When inquiring specify CP8272 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## READY

### ...TO SERVE YOUR NEEDS FOR NORDSTROM VALVES

We have made tremendous progress on our backlog of orders and within a few weeks, if not by the time this message appears, we will be largely in the clear on critical steel valves. We will then have open capacity to handle new steel valve business in the sequence received, subject, of course, to the priority rating assigned.

NEED VALVES AT ONCE? Right now we have available manufacturing facilities that are not suited to the production of steel valves and we can effect immediate stock delivery of Nordstrom Semi-Steel Valves in certain sizes and figure numbers.

## AIM

### ...YOUR SIGHTS NOW ON LATE 1943 AND FIRST QUARTER 1944 CONSTRUCTION

Those booking orders now, in anticipation of late 1943 and 1944 valve requirements will have first call on our facilities. Immediate action on your part is desirable so that we may establish firm delivery dates based upon amply foreseen needs for materials and carefully predicated manufacturing schedules.

## FIRE

...YOUR INQUIRIES AND ORDERS AT US  
We can handle your immediate business in many lines and orders for Nordstrom Valves of any type can be accepted with excellent prospect of delivery within a maximum of ninety days after receipt of firm specifications. (The WPB lead factor for cast steel valves is 90 days.)

## NORDSTROM VALVES

MERCO NORDSTROM VALVE CO.  
A Subsidiary of Pittsburgh Equitable Meter Co.  
Main Offices: 400 Lexington Ave., Pittsburgh, Pa.

When inquiring specify CP8273 — see information request blank, pgs. 2-3

## PRODUCTION

### Synthetic Rubber Sponge Now Available In 3 Grades

*Has good oil resisting properties and can be made into slabs, cord and tubing*

Uses — For use as a general purpose synthetic rubber sponge.

Features — All grades are said to have good oil resisting properties and can be made into slabs, cord, tubing or in almost any other molded shape.

Description — Made in three densities, soft, medium and firm grades. The grades are said to correspond quite well with the pre-war crude rubber sponge. Slabs 24 inches by 120 inches can be made into thicknesses of 1/8, 3/16, 1/4, 3/8, and 1/2 inch and 24 by 60 inch slabs into 3/4 and 1 inch thicknesses. Complete information is available upon request.

B. F. GOODRICH CO., Dept. CP, Akron, Ohio.

When inquiring specify CP8275 — see information request blank, pgs. 2-3

### Water & Sewage Treatment Equipment

Equipment for water, sewage and industrial waste treatment plants is given interesting and detailed treatment in a thirty-six-page-catalog. The equipment includes bar and disc type screens, screening grinders, grit washers, sludge collectors for primary and final settling tanks, floatrol, (controlled flocculation), scum removers, dry feed chemical machines, garbage grinders and belt and spiral conveyors. Catalog 775 on request.

THE JEFFREY MFG. CO., Dept. CP, Columbus, 16, Ohio.

When inquiring specify CP8276 — see information request blank, pgs. 2-3

## BARREL TRUCK

### Loads Automatically

Barrels weighing up to 1,000 lbs. handled with ease . . . truck weighs but 85 lbs. To load, shove truck up against barrel or drum, then drop sliding steel catch over rim . . . pull toward you and truck loads automatically—loads from row as easily as when barrel stands alone.



Sliding catch grips until released by operator; note long hook for bilge type barrel.

To avoid error, order by item number.

Sturdily constructed of heavy steel. 10" steel wheels. Greatest width only 22", permitting it to pass through narrow aisles and doors.

\$3350

f.o.b. Detroit  
Subject to change without notice

Item S-911

**Palmer Shile Co.**  
7128 West Jefferson Ave., DETROIT 17, MICHIGAN

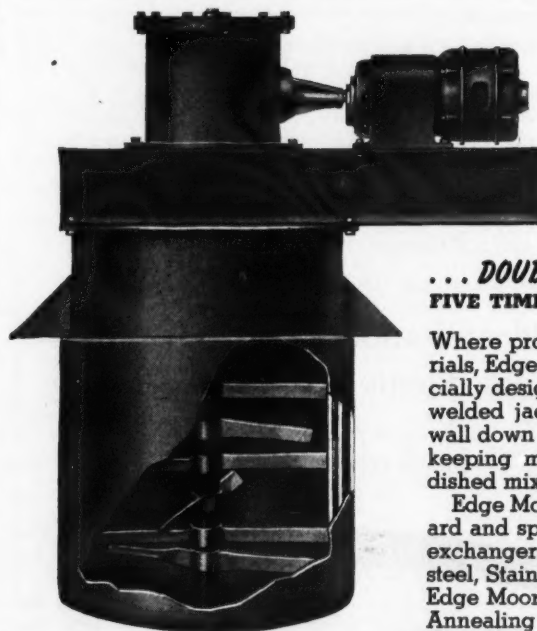
When inquiring specify CP8277 — see information request blank, pgs. 2-3

### Edge Moor ...heavy duty welded mixer

... DOUBLE MOTION AGITATOR MAKES HEAT TRANSFER UP TO FIVE TIMES AS EFFECTIVE ... PRODUCES A SMOOTHER, BETTER MIX

Where problems are encountered in the mixing of highly viscous materials, Edge Moor Heavy Duty Mixers provide an effective solution. The specially designed Edge Moor Dual Action Agitator, operating in a seamless welded jacketed shell completely and continuously scrapes the jacket wall down to the metal, making heat transfer up to 5 times as effective by keeping materials from sticking and overheating. Hemispherical and dished mixer bottoms replace the usual cast metal construction.

Edge Moor offers the experience of 75 years in the fabrication of standard and special process equipment including mixers, kettles, stills, heat exchangers, towers, autoclaves, pressure vessels, etc., from 1/2" to 21 1/2" steel, Stainless steel, Monel, Nickel, Silicon Bronze, Clad Metals, etc. The Edge Moor shops are equipped for Class one welding, Stress Relieving, Annealing and X-Ray.



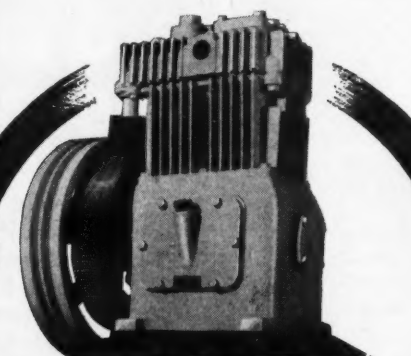
Write for the Edge Moor Catalog 115, or if your needs are specific, send us your designs and specifications for prompt quotation.

NEW YORK CITY: 30 ROCKEFELLER PLAZA  
CHICAGO: ONE NORTH LA SALLE STREET

**EDGE MOOR**  
IRON WORKS, INC.

EDGE MOOR, DELAWARE

—When inquiring specify CP8278 . . . see information request blank, pgs. 2-3—



### 1st in design TOPS IN EFFICIENCY

QUINCY was first to design and build an air compressor that combined modern appearance with improved mechanical features. Construction is simpler. Radiation area is increased 12%. Lubrication is more thorough—more positive. The policy of building air compressors exclusively has helped to make the name "Quincy" a symbol for dependability and efficiency. If you have compressed air problems, let us help you solve them! QUINCY COMPRESSOR CO., Dept. M-3, Quincy, Illinois.

**Quincy**  
COMPRESSORS

When inquiring specify CP8274 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

**PREVENTIVE SAFETY  
AGAINST**

**Skin  
Irritations**

**FOR EVERY WORKER  
ON EVERY  
WAR JOB**

**M-S-A**

**FEND**

**BARRIER PROTECTIVE  
CREAMS & LOTIONS**

Occupational skin irritation is by far the most prevalent industrial disease of today . . . but it can be controlled by proper corrective measures including the use of effective industrial skin creams.

Whether your dermatitis problems are caused by cutting oils, solvents, caustic solutions, waxes, metals, salts, or any of the many-score skin irritants, you'll find the protective answer in the complete FEND line.

FEND, rubbed well into the skin, protects by filling the pores with a bland material and coating the skin with an invisible barrier through which irritants cannot penetrate. FEND is easily removed by washing with mild soap and water. Send for the detailed story in Bulletin No. FA-79.

**MINE SAFETY APPLIANCES COMPANY**

Braddock, Thomas and Meade Streets

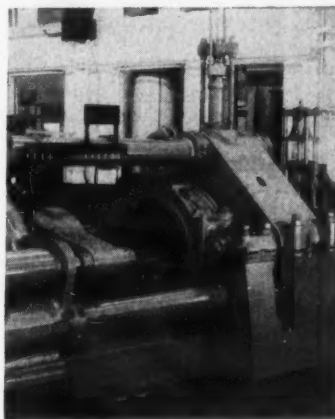
Pittsburgh, Pa.

District Representatives in Principal Cities

## PRODUCTION

### Extrusion Press Requires Minimum of Readjustments

*Employs distinctive method of supporting the platen and container holder in the centerline of the container*



EXTRUSION PRESS

**Uses** — Designed to produce extruded tubes of uniform wall thickness without frequent readjustments of tools and machinery parts.

**Features** — These presses utilize a distinctive method of supporting the platen and container holder in the center line of the container. This simple method permits expansion and contraction of the platen and container holder in all directions

without losing alignment with the centerline of that part of the machine which carries the press stem and remains cold. In this way the adjusted central position of the press will be maintained; thus resulting in uniform wall thickness.

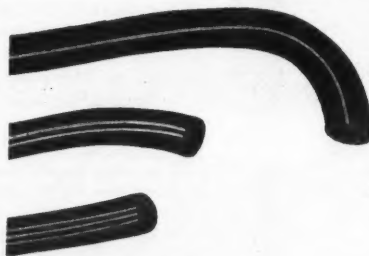
**Description** — The illustration shows that the fundamental idea of supporting platen and container laterally at the centerline of the container is carried logically to the centerline of the container itself. The container carries keys laterally which engage keyways in the housing and so enable the housing of the container also to expand evenly. The entire design, thus affected, minimizes readjustments.

SCHLOEMAN ENGINEERING CORP., Dept. CP, Empire Bldg., Pittsburgh, Pa.

When inquiring specify CP8280 — see information request blank, pgs. 2-3

### Identification Stripes Extruded Into Plastic Insulation Tubing

*Stripes are integral part of extrusion with opaque or transparent tubing; provide easy, accurate identification*



INSULATION TUBING furnished with one or more color stripes for identification

**Uses** — For electrical insulation with one or more color stripes extruded into the body of the tubing to make easy identification possible.

**Features** — Simultaneous plastic extrusion of two or more colors. Stripes are

an integral part of the tubing itself and are permanent.

**LAMMERT  
ROTARY**

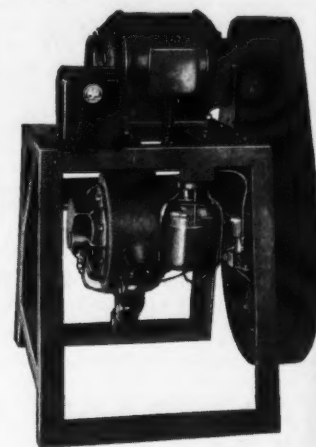
## VACUUM PUMPS

VACUUM TO 0.02 MM. OF BAR.

MODELS FOR 3-580 C.F.M.

**NEW!**

**SEND  
FOR  
BULLETIN  
MODEL  
SWMF.**



**LAMMERT & MANN CO.**  
215-21 N. WOOD ST. CHICAGO

When inquiring specify CP8281 — see information request blank, pgs. 2-3

**Hard to  
Believe,**

**BUT — in  
exceptionally  
difficult operations  
SPARKLER  
HORIZONTAL PLATE  
FILTERS  
have solved  
filtering problems**

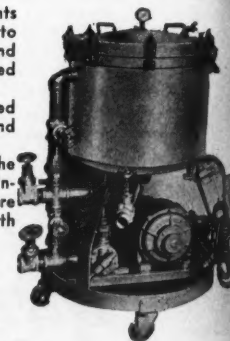
Many laboratories and plants throughout America have proved to their advantage the efficiency and economy of the Sparkler enclosed system of filtration.

Sparkler filters are being utilized for essential life-saving work behind the fighting fronts.

Come and see for yourself at the Sparkler Exhibit at the Chemical Industries Exposition, Madison Square Garden, New York, Dec. 6-11, Booth No. 615.

Write for any special details.

**SPARKLER MFG. CO.**  
243 Lake St., MUNDELEIN, ILL.



When inquiring specify CP8282 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW

When inquiring specify CP8279 — see information request blank, pgs. 2-3





## SLY NO. 4 TILTED BLAST MILL ... Great for Small Castings

★ Used extensively to clean small castings, forgings, stampings, tools, etc., on a production basis. Takes non-ferrous castings—cores and all—saving core removal time.

Particularly effective because of its tilted barrel which, by thoroughly mixing the load, exposes all surfaces to blast in shortest time.

Automatic—requires but little attention. Send for literature.

**SLY**

THE W. W. SLY MFG. CO.  
4754 TRAIN AVE., CLEVELAND 2, OHIO  
INDUSTRIAL DUST CONTROL

When inquiring specify CP8283 — see information request blank, pgs. 2-3

## ERRAND OF MERCY



Relief supply for American prisoners of war aboard the SS. GRIPSHOLM bound for the Far East

### Signode Helps Delivery of Relief Supplies for American Prisoners of War

Model L1 Strapping Machine combines the tensioning and sealing operations of the Signode Steel Strapping System into one unit. Just as Signode Strapping has helped deliver the goods on all fronts, it has been entrusted with the life-saving, hope-giving relief supplies for our soldier prisoners of war. Every extra margin of safety is justified to insure against the bitter disappointment of damaged goods from home.

No matter what your product or your shipping problem may be, Signode package and carloading engineers stand qualified to give you practical shipping suggestions for any product or problem.

Remember, a nearby Signode representative is ready to help assure safe delivery of your vital war materials.

Signode Steel Strapping Meets All Federal Strapping Specifications

**SIGNODE**

STEEL STRAPPING COMPANY  
2658 N. Western Ave., Chicago, 47 Ill.  
Brooklyn, N. Y. San Francisco, Calif.  
391 Furman Ave. 477 Bryant St.

When inquiring specify CP8284 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

## PRODUCTION

great dialectic strength and excellent non-oxidising prop- in a wide variety of sizes, lengths, thicknesses as well as various degrees of flexibility. The tubing is said to have great dialectic strength and excellent non-oxidising properties and resistance to acids, alkalies, oils and greases. Does not deteriorate or age due to exposure to sunlight. Either opaque or transparent tubing can be furnished with one or more contrasting color stripes in any combination desired. Bulletin Number 300 describing "Striatube" on request.

CARTER PRODUCTS CORP., Dept. CP, 6921 Carnegie Ave., Cleveland, 5, Ohio.

When inquiring specify CP8285 — see information request blank, pgs. 2-3

### Flexible Couplings for Direct Connected Drives From Fractional HP Service to Mill Type Drives

Flexible connected couplings for direct connected drives embody a wide selection, covering requirements from fractional horsepower to mill type drives. No die cast or fabric parts are used in the light duty couplings and ease of installation, no special tools being required, is emphasized. General purpose couplings, spider arm hubs for use where coupling is enclosed, heavy duty couplings and special applications are all illustrated and described. Dimensions and other specifications are conveniently tabulated and there are numerous drawings that show in detail the construction and applications of the couplings. This catalog is available upon request.

JENCICK ENGINEERING, INC., Dept. CP, 1825 East 18th St., Cleveland, Ohio.

When inquiring specify CP8286 — see information request blank, pgs. 2-3

## Tailor Made BAG CLOSERS AT Standard Unit COST



Taped top closure for multi-wall paper bags.



Plain sewed closure for multi-wall paper bags.



Plain sewed closure for multi-wall paper bags.



"Doubt-Tape" closure — ideal for small paper bags.

High efficiency with low manufacturing cost usually means expensive special equipment. But with Union Special, you get bag closers "tailored to your needs" at "standard unit" cost, because of flexibility of the line.

With four types of sewing heads and many standard mountings from suspended table units to automatic, conveyor-equipped machines, combinations are available to produce strong, sewed closures for all fabric and paper bags.

Write for recommendations. UNION SPECIAL MACHINE CO., 442 North Franklin Street, Chicago 10, Illinois.

**Union Special**

When inquiring specify CP8287 — see information request blank, pgs. 2-3

## Simplicity Gyration Screens



Controlled Vibration

have been built and used since 1922 and today are operating in over 1610 different plants through out the country. Simplicity screens are used for every type of operation requiring a separation into sizes, reclamation of products or dewatering of liquid pulps.

Simplicity screens are used to recover good wood fibre from the waste white water in paper mills; screen starch solutions through 200 mesh cloth; dewater finely ground rubber; size and also pack every kind of food cereal, and make fine mesh separations in different chemical plant operations.

Simplicity Gyration Screens are available in sizes ranging from a 2' x 3' up to a 5' x 14', and in single, double, triple and four decks.

Write for further information.



2' x 3' single deck

**SIMPLICITY ENGINEERING COMPANY**  
DURAND, MICHIGAN

For Canada Waterous Limited, Brantford, Ontario

When inquiring specify CP8288 . . . see information request blank, pgs. 2-3

# Call A BLACKMER MAN ABOUT PUMPS!

These men have helped to solve difficult pumping problems in many types of industrial plants — involving the transfer of liquids varying in characteristics from naphtha to asphalt.

THEY ARE AT YOUR SERVICE

Call the man nearest you — or write the factory.

ATLANTA, GEORGIA W. A. Duncan	1155 Boulevard, N.E. Phone: VE-9501
BALTIMORE 16, MD. H. O. Link, Jr.	614 Glenolden Avenue Phone: Lalayette 3922
BOSTON, WALTHAM, MASS. W. E. Burke	24 Tolman Street Phone: "Waltham" 3692
BUFFALO, LACKAWANNA 10, N. Y. A. W. Genske	153 Lincoln Avenue Phone: Woodlawn 1300
CHICAGO, ILLINOIS Bart C. Young	608 S. Dearborn Street Phone: Harrison 1494
CLEVELAND 8, OHIO Power Plant Supply Co.	490 E. 120th St., N.E. Phone: Liberty 2142
DAYTON 8, OHIO G. E. Schneider	204 Hopeland Street Phone: Hemlock 3474
DETROIT 24, MICHIGAN H. E. Oldham	1147 Book Building Phone: Cadillac 3633
ERIE, PENNSYLVANIA H. D. McClintock	751 Napier Avenue Phone: 63277
HOUSTON, TEXAS B. M. Vaughn	3227 Milam Street Phone: J-21887
INDIANAPOLIS 4, INDIANA G. E. Schneider	307 N. Pennsylvania St. Phone: Riley 5001
KALAMAZOO, MICHIGAN C. F. Harper	American Nat'l Bank Bldg. Phone: 7380
KANSAS CITY, MISSOURI J. J. Heintz	421 B.M.A. Building Phone: HA 4883
LOS ANGELES, CALIFORNIA S. G. Anstey	405 S. Central Avenue Phone: Tucker 5758
MEMPHIS, TENNESSEE J. H. Sprenger	697 Hillcrest Phone: 4-6054
MILWAUKEE 2, WISCONSIN A. C. Nydegger	1127 North Van Buren St. Phone: Broadway 5888
MINNEAPOLIS, MINNESOTA S. P. McElmeel	808 LaSalle Avenue Phone: Atlantic 5805
NEW YORK 7, NEW YORK F. P. Goertz	71 Murray Street Phone: Barclay 7-8338
OMAHA 8, NEBRASKA Interstate Machy. & Sup. Co.	1008 Douglas Street Phone: Atlantic 0871
PHILADELPHIA 4, PENNSYLVANIA R. A. Oton	410 Budd Street Phone: Bell-Baring 4010
PITTSBURGH, PENNSYLVANIA H. A. Hays	915 Union Trust Bldg. Phone: Court 3752
ROCHESTER 5, NEW YORK J. H. Crozier	23 University Avenue Phone: Stone 2654
ST. LOUIS 3, MISSOURI R. F. Leinberger	1516 Pine Street Phone: Garfield 1151
SALT LAKE CITY 9, UTAH The Lang Company	287 West First South Phone: 3-5831
SAN FRANCISCO 5, CALIF. H. E. Gates	88 Folsom Street Phone: Garfield 7734
SEATTLE 4, WASHINGTON A. H. Cox & Co.	1757 First Ave. So. Phone: Main 1121
SYRACUSE, NEW YORK John B. Foley, Jr.	249 Erie Boulevard, West Phone: 2-5678
TAMPA 4, FLORIDA Henry G. Carter	5505 Branch Avenue Phone: 8-6587
TULSA, OKLAHOMA Power Machinery Co.	200 North Denver Phone: 5-4151
WILLIAMSPORT 39, PENNSYLVANIA Geo. N. Pennington	442 Tinsman Avenue Phone: 7823
YOUNGSTOWN 5, OHIO Industrial Sales & Sup. Co.	3931 Market Street Phone: 2-2212

## CANADA

TORONTO, ONTARIO The Arthur S. Leitch Co. Ltd.	1125 Bay Street Phone: Kl. 4166
VANCOUVER, B. C. Thos. W. Mackay	1396 Richards St. Phone: Marine 7631

## POWER PUMPS

5 to 750 GPM. Pressures to 300 psi. Temperatures to 600° F.

## HAND PUMPS

7 to 25 GPM — 54 Models

Write for Bulletin 301 — Facts about Rotary Pumps.

## BLACKMER PUMP COMPANY

18411 Century Avenue Grand Rapids 9, Michigan



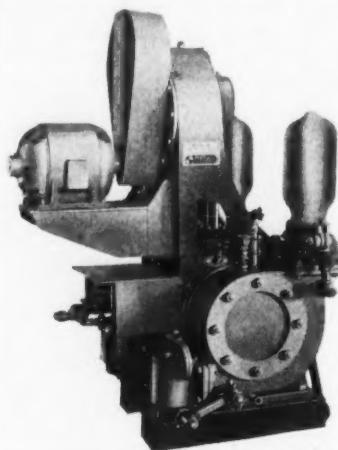
**BLACKMER Rotary PUMPS**  
"BUCKET DESIGN"—SELF-ADJUSTING FOR WEAR

When inquiring specify CP8289 — see information request blank, pgs. 2-3

## PRODUCTION

### Duplex Pressure Diaphragm Pumps

Combine advantages of pressure head discharge with those of conventional diaphragm pumps



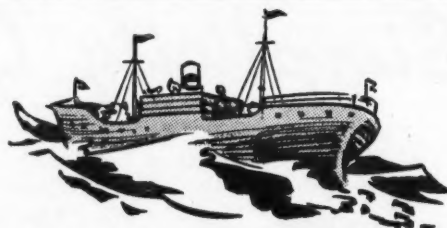
DIAPHRAGM PUMP . . 2 & 4 in. Sizes

justable eccentric stroke mechanism adapts this unit to metering applications. Ball bearing equipment throughout. Easily replaceable wearing parts. Furnished of alloy construction where corrosive conditions are encountered. Cata-

Uses — Designed for wide range of handling and controlling operations.

Features — The special design of this pump combines the advantages of pressure head discharge with the various advantages of the conventional type old diaphragm pump.

Description — Available in duplex models in two inch and four inch sizes with capacities up to 100 gallons per minute and discharge pressures up to twenty-five pounds per square inch. Ad-



## Insure SAFE CONVOY

You have fullest assurance that your shipping containers will arrive intact, at any destination, whether overseas or here at home, if they are properly sealed with Findley's Prescription Adhesives. High water resistance, bulldog-grip "biting" and holding tenacity, and free-flowing application characteristics are combined to provide the vital protection your merchandise must have in transit . . . and as a further safeguard against damage or loss in storage or handling under adverse condition. Findley's case-sealing adhesives are tailor-made to meet today's rigid shipping demands.

There is a Findley Adhesive for every labeling, packaging, fabrication and case-sealing requirement. Tell us about your needs.

## THE F. G. FINDLEY COMPANY

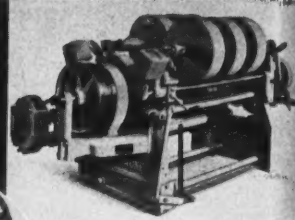
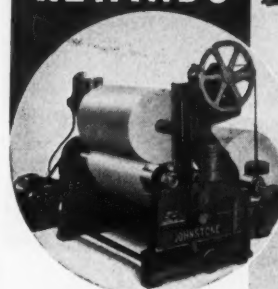
1222 N. 10th St.

Milwaukee 5, Wis.

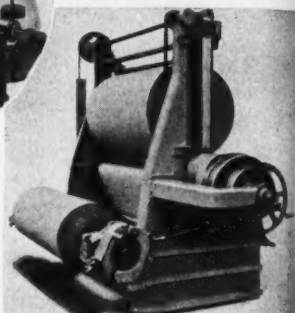
**Findley's INDUSTRIAL ADHESIVES**

When inquiring specify CP8290 — see information request blank, pgs. 2-3

## SLITS and REWINDS



CLEAN CUT, DENSE, HARD UNIFORMLY WOUND ROLLS



Paper, Board, Gauze, Burlap, Onaberg Cloth, Waxed Papers, Abrasive Paper, Abrasive Cloth, Varnished Cambrics, Imitation Leather, Coated Papers, Un-Cured Rubber, Semi-Cured Rubber.

Catalogs Sent on Request  
Also Catalog re: Unique Uniform Tension Unwinder

**JOHNSTONE**  
Engineering & Machine Co.  
DOWNTOWN, PA.

When inquiring specify CP8291 — see information request blank, pgs. 2-3

## Let JOHNSON JOINTS help KEEP ROLLS ROLLING

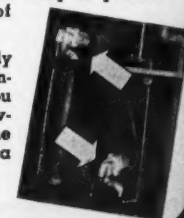
On Calenders, Dry Cans, Ironers, Mills and all similar machines with steam or liquid filled cylinders.

THERE are three important ways Johnson Rotary Pressure Joints are helping wartime industry meet—and beat—the production promise.

1. Their packless, self-oiling, self-adjusting, self-aligning design puts an end to all the servicing demanded by old style stuffing boxes and steam fits—releases hard-to-get help for more productive work.
2. They save valuable production time that is wasted when machines are shut down to repair or repack stuffing boxes.
3. They offer a simpler, neater way to provide more efficient methods of draining rolls and drums.

No wonder industry has already installed more than 50,000 Johnson Joints, in barely ten years. You can get the same benefits and savings for your plant, because the Johnson Joint requires only a minimum of critical materials.

Write for complete details



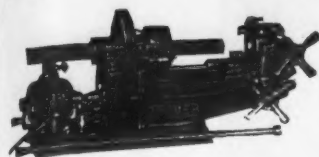
**The Johnson Corporation**

826 WOOD STREET THREE RIVERS, MICHIGAN

When inquiring specify CP8292 — see information request blank, pgs. 2-3



## The A-B-C of Pipe and Bolt Machines

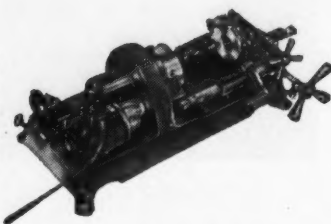


### Beaver Model-A

A high-speed heavy-duty deluxe Pipe and Bolt Machine. Range 1/4 to 2-inch—up to 12-inch with geared tool and drive shaft. Bolts 1/4 to 2-inch. Wt. 415 lbs. Ask for Bulletin-A.

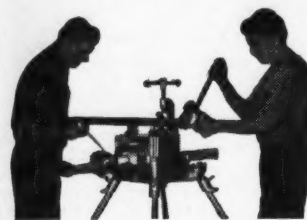
### Beaver Model-B

A compact utility Pipe and Bolt Machine combining many features of Model-A with the easy portability of Model-C. Range 1/8 to 2-inch—up to 8-inch with geared drive shaft and bolt tools. Bolts up to 1 1/2-inch. Wt. 280 lbs. Ask for Bulletin-B.



### Beaver Model-C

A sturdy little Power Unit Converts Hand Pipe Tools into Power Tools from 1/8 to 8-inches. Threads 8-inch in 6 minutes. Threads bolts up to 1 1/2-inch. Equipped with automatic chuck wrench ejector—a safety feature. Two men can use it at the same time without interference. Easily portable—weighs about 150 lbs. Write for Bulletin-C.



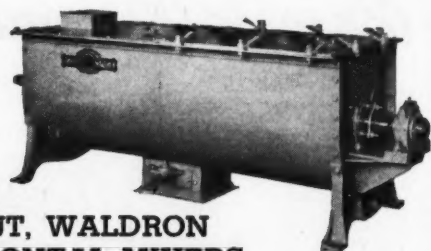
Also — Complete Line of Hand Tools!

## BEAVER PIPE TOOLS

1143 REVIEW AVE.

WARREN, OHIO

When inquiring specify CP8293 — see information request blank, pgs. 2-3



## SPROUT, WALDRON HORIZONTAL MIXERS

For intimacy of resulting mixture, SPROUT, WALDRON Horizontal Mixers are in a class by themselves. Top, bottom, or end discharge; lined or unlined; with or without jackets; fabricated of metal or wood—important under priority regulations.

SPROUT, WALDRON standard mixers from 2 1/2 to 550 cubic feet capacity. Many are as highly specialized as laboratory or pilot plant equipment. Others capable of varied functions. Special or standard, you are almost certain to find it in the SPROUT, WALDRON line which is the largest in the trade.

Special Mixers engineered to your own design.

**SPROUT, WALDRON & COMPANY**  
Manufacturing Engineers Since 1866  
155 Sherman St.  
Muncy, Penna.

When inquiring specify CP8294 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

## PRODUCTION

log describing this unit, standard diaphragm of similar capacities as well as thickeners for thickening and dewatering of pulp products, screw classifiers and hydro-separators.

WESTERN MACHINERY CO., Dept. CP, 760 Folsom St., San Francisco, Cal.

When inquiring specify CP8295 — see information request blank, pgs. 2-3

## X-Ray Apparatus Examines Drug, Food Products; Easily Operated

*Also provides for instantaneous examination of incoming, outgoing parcels where such test is an essential precaution*

**Uses** — Electronic device detects foreign substances and defects in manufacture. Wide application in the fluoroscopic and radiographic internal examination of drugs, foods and various products. May also be used in examining ingoing and outgoing parcels and small luggage in plants where such examination is essential.

**Operation** — Plug into standard 110 v. A. C. power source, open compartment door, insert object, close door, push button and view internal structure instantly through an eye-level eye piece. No skill required to operate.

**Description** — Weighs about 425 pounds. Requires about five square feet of floor space. Safety to operator is assured by rayproof, shockproof housing. Door is electrically interlocked so that circuit is interrupted whenever the examining compartment door is opened.

NORTH AMERICAN PHILLIPS CO. (Ind. Electronics Div.), 419-4th Ave., New York, N. Y.

When inquiring specify CP8296 — see information request blank, pgs. 2-3

## Over 250,000 Sold



- Quicker Heating
- Small Size
- Light Weight
- One Moving Part
- Low Price

Sold by more than 100 Mill Supply Distributors throughout the U. S. A.

See your supply house or write for Catalog T-1738.

YARNALL-WARING CO., 125 Mermald Ave., Phila. 18, Pa.

**YARWAY**

## IMPULSE STEAM TRAP

When inquiring specify CP8297 — see information request blank, pgs. 2-3



**Rust Can't Touch HARPER BOLTS**



**HARPER Fastenings resist rust, corrosion, salt laden air and other deep sea troubles. They're made of non-ferrous and stainless alloys. Today they are doing Trojan duty on battle ships, cruisers, aircraft carriers, PT boats, landing boats, submarines and many other types of vessels.**

Because they are rust and corrosion resistant, Harper fastenings withstand severe conditions in the chemical, food, utilities and numerous other industries. In the proper alloys they are non-magnetic, non-sparking, repeatedly removable and have other sterling properties.

### 4320 STOCK ITEMS

... of bolts, nuts, screws, washers, rivets and accessories in the non-ferrous and stainless alloys.

**THE H. M. HARPER COMPANY**  
2644 Fletcher Street • Chicago, Illinois

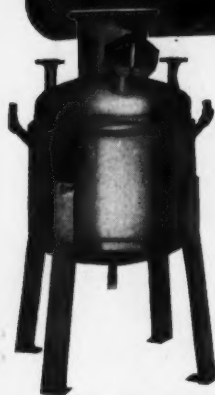
BRANCH OFFICES: 45 West Broadway, New York City 7 • 1442 Broad Street Station Bldg., Philadelphia 3 • 332 L. N. Van Nuys Bldg., Los Angeles 14 • 2nd National Bank Bldg., Houston 2, Texas • 800 Broadway, Cincinnati 2, Ohio • 739 N. Broadway, Milwaukee 2, Wis. • Representatives in Principal Cities.

**HARPER**  
EVERLASTING FASTENINGS  
BRASS • BRONZE • COPPER  
EVERDUR • MONEL • STAINLESS

When inquiring specify CP8298 — see information request blank, pgs. 2-3

Your war needs and post-war plans will make a visit to Booth 111 of the Chemical Exposition highly rewarding. The processing equipment we will have on display will indicate the ability of our engineers and craftsmen. Some of the special machinery that we use for manufacturing a wide variety of alloy and stainless steel equipment to specifications will also be shown. We have some production capacity immediately available for projects connected with the war effort.

CONSULT WITH US



↑ Jacketed Kettle Still — Hand-hole and column flange, with or without agitators. Plate 7015.

## STAINLESS STEEL AND ALLOY PROCESSING EQUIPMENT

IN GAUGES TO 3/4" THICK

AGITATORS	PANS
AUTOCLAVES	PIPING
BLENTERS	PRESSURE VESSELS
COLUMNS	RACKS
COOLERS	SCOOPS
CONDENSERS	SCREENS
DEHYDRATING EQUIPMENT	SINKS
DIPPERS	STILLS
DRYERS	TABLES
EVAPORATORS	TANKS
HEAT EXCHANGERS	TOWERS
KETTLES	TRAYS
LININGS	TROUGHS
MIXERS	TRUCKS
PAIRS	TUBING
	VATS

All orders subject to government priority regulations



↓ Alloy Piping — Stainless steel welded process piping with built-up Van Stone joints. Plate 7079.

Heat Exchangers — Stainless steel tube bundle for condenser. Plate 7108.

Heat Exchangers — Condenser shell. Plate 7109.



**S. BLICKMAN, INC.**  
711 GREGORY AVE., WEEHAWKEN, N. J.  
TANKS • KETTLES • CONDENSERS • AGITATORS • EVAPORATORS • PANS • VATS • CYLINDERS • PIPING

When inquiring specify CP8299 — see information request blank, pgs. 2-3

## PRODUCTION

### Easy Reading Thermometer Uses Light Weight Plastic Case Front

Glass on entire front can be easily replaced at nominal cost; back protected against corrosion

**Uses** — Designed to meet wide variety of requirements and service conditions.

**Features** — By using a plastic case front, weight is reduced and an adequate substitute for metal is provided. Case front is not affected by the temperatures to which the case is subjected under actual service conditions. Either the glass front or the entire front can be replaced at nominal cost. Yellow back lens front thermometer tubing is a great advantage since the yellow background offers the best color contrast with the mercury.

**Description** — Malleable iron back provides satisfactory substitute metal for the brass formerly used and is fully protected against corrosion by a durable black finish. The tubing is comparatively easy to produce and involves no complicated construction of bore or lens.

C. J. TAGLIABUE CO., Dept. CP, Park & Nostrand Ave., Brooklyn, N. Y.

When inquiring specify CP8300 — see information request blank, pgs. 2-3

### Electric Instruments, Principles of Operation

Concise discussion of the characteristics of electric instruments and principles of operation is presented in twenty page booklet. Initial pages in the booklet classify and define the various types of instruments. The remaining portion is devoted to detailed descriptions and discussions augmented by various drawings. Booklet GET 1173 on request.

GENERAL ELECTRIC CO., Dept. CP, Schenectady, N. Y.

When inquiring specify CP8301 — see information request blank, pgs. 2-3

### Plastic Breast Protectors

Designed for complete protection for women engaged in hazardous industrial work



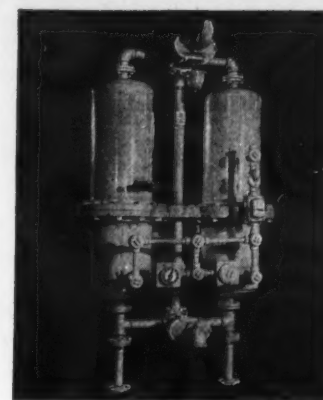
**Uses** — Designed to provide comfortable and complete breast protection for women engaged in various types of hazardous industrial work.

**Features** — Light weight, molded to natural body curves, flared at contact edges to assure full comfort. Easily adjusted to suit wearer.

**Description** — Molded of material which provides resistance to impact. Designed to provide additional protection as it extends well back under arms to prevent possible painful injury of sensitive lymphatic glands. Durable plastic construction colored in fleshstone. Literature on request.

WILLSON PRODUCTS INC., Dept. CP, Reading, Pa.

When inquiring specify CP8302 — see information request blank, pgs. 2-3



### COMPRESSED AIR DRIED TO BELOW ZERO DEWPOINTS

- For instrument lines
- For process work
- For inspection and assembly departments



Kemp KSG Silica-Gel Adsorptive Dryers are the standard in modern industrial applications. For Bulletin T 25C write The C. M. Kemp Mfg. Co. 405 East Oliver Street Baltimore, Maryland

## KEMP of BALTIMORE

When inquiring specify CP8303 — see information request blank, pgs. 2-3

### Precise Proportions

OF ACIDS

ALKALIS

SLURRIES

SALTS

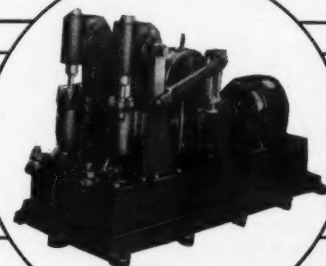
DYES

SOLVENTS

EMULSIONS

INHIBITORS

ETC.



### Metered Through

**HILLS-McCANN**  
Positive PROPORTIONING PUMPS  
WITH POSITIVE ACTING CHECK VALVES

Chemical service exacts the utmost precision from proportioning pumps. Hills-McCanna units have been conditioned for this scientific duty by engineering refinements which have perfected the performance of these pumps under the most trying conditions. They assure the continuous feeding of chemicals of all kinds in dosages accurate to  $\pm 1/2\%$ , at exact intervals, with mechanical regularity and thorough dependability. Catalog P-41 is a "must" for chemical plants — send for it.

**HILLS-McCANN CO.**  
2370 NELSON STREET, CHICAGO

PROPORTIONING PUMPS • AIR & WATER VALVES • CHEMICAL VALVES  
MARINE VALVES • FORCED-FEED LUBRICATORS • DOWMETAL CASTINGS

When inquiring specify CP8304 — see information request blank, pgs. 2-3



## PRODUCTION

### Hand Pump — Pressure 125 Psi

For applications such as with hydraulic control devices where high pressure is required



HIGH PRESSURE HAND PUMP

**Uses** — The design of this new high pressure rotary hand pump is said to make it especially suitable in a variety of applications where hand operated high pressure pumps are required, chiefly in connection with hydraulic control devices as well as other equipment.

**Description** — This unit is an all-bronze rotary hand pump, that develops a pressure of 125 pounds per square inch and has a capacity of one and one half gallons per minute. (originally designed for marine service it is also adapted for industrial use.)

BLACKMER PUMP CO., Dept. CP, Grand Rapids, Mich.

When inquiring specify CP8305 — see information request blank, pgs. 2-3

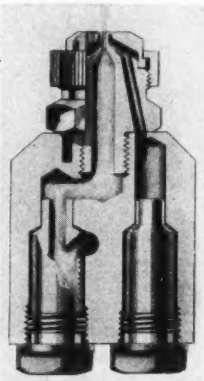
### Nozzle Has Air, Water Strainers in Body for Easy Cleaning

Permits servicing without disturbing nozzle or lines; gives round spray for humidification

**Uses** — For use in many processes requiring close control of atmospheric conditions.

**Features** — Nozzle is complete unit in itself and can be quickly and easily adapted to almost all types of installations. Two monel metal strainers, one for air, the other for water are included right in the body of the nozzle. Strainers easily removed for cleaning or replacement without disturbing the nozzle or lines. Eliminates the possibility of clogging the nozzle orifice by pipe scale or other dirt loosened by accidental jarring of lines.

**Description** — All parts accurately machined of brass and white coated. Every part easily renewable. Spray is projected ten to twenty feet depending on air pressure used in humidifying system. This nozzle (Type JHS) water and compressed air are mixed externally to produce a round spray.



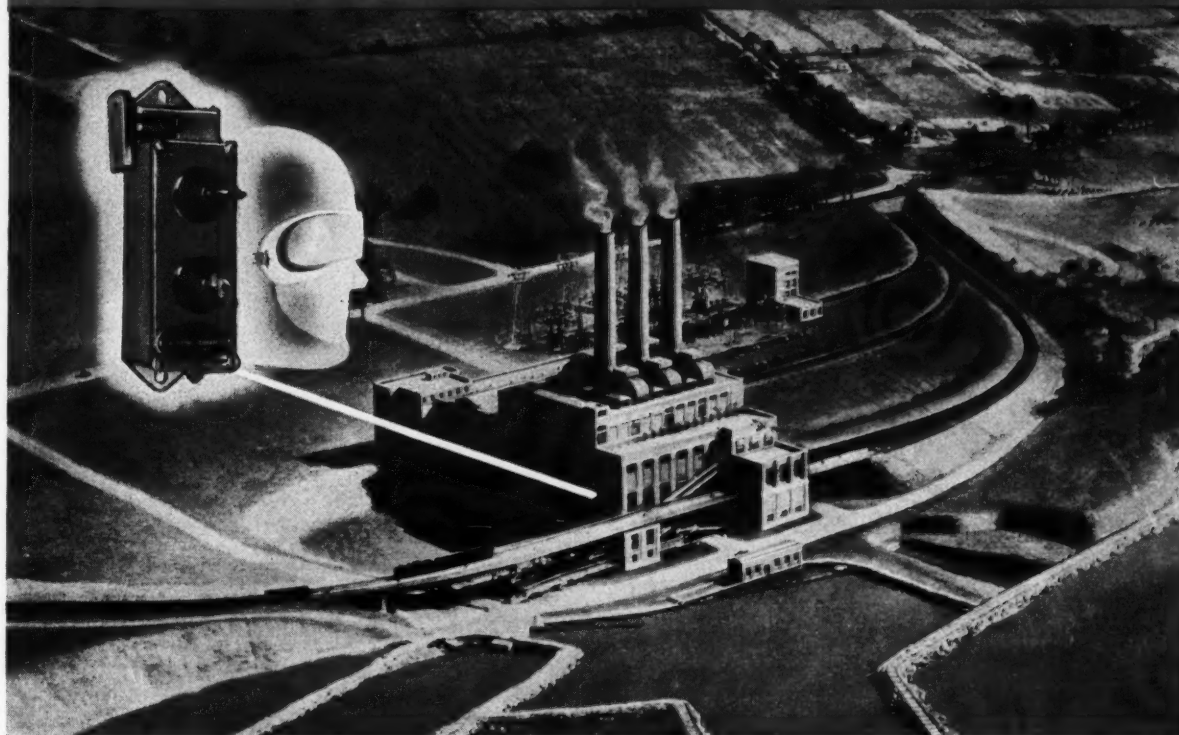
STRAINERS . . in body of nozzle . . spray range 10-20 ft.

SPRAYING SYSTEMS CO., Dept. CP, 4037 W. Lake St., Chicago, Ill.

When inquiring specify CP8306 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

# The Lock that never "Forgets"



Safety rules are in force in virtually all Power Plants. Yet costly accidents frequently occur . . . very often because someone forgot!

So why not replace human frailty with mechanical infallibility? Install the Safety Men of "The Invisible Crew" . . . BENDIX-CORY\* SAFETY INTERLOCKS.

These life and property saving units never forget. They make unauthorized

access to dangerous equipment impossible. They keep such compartments or switches locked in use . . . or out of use . . . until the operator has complied with all of your safety regulations.

With BENDIX-CORY SAFETY INTERLOCKS you can interlock and safeguard any number of points. Write for full information. Let Bendix engineers help solve your problem

\*TRADE MARK OF BENDIX AVIATION CORPORATION

Products of this division are members of "The Invisible Crew"—precision equipment which 30 Bendix plants from coast to coast are speeding to our fighting crews on world battle fronts.



BENDIX MARINE DIVISION • One Hanson Place, Brooklyn, New York

When inquiring specify CP8307 . . . see information request blank, pgs. 2-3



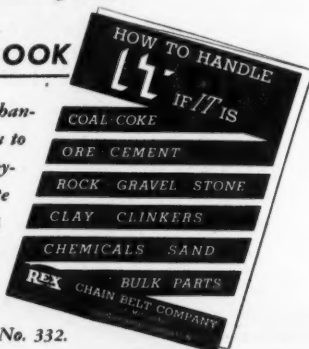
## PREVENT *Spillage*

Skillfully designed, leakproof, heavy-duty Rex Apron Conveyors will keep fine, free-running materials moving through your plant without spillage. They can be installed in existing systems or as complete materials handling units. Capacities range from a few to hundreds of tons per hour.

Rex Apron Conveyors are available in a number of styles with fixed or moving skirt plates. Their rugged construction will effect considerable savings in power, upkeep, maintenance and total handling costs.

### SEND FOR FREE BOOK

Whatever your materials handling problem, it will pay you to investigate Rex Apron Conveyors. See your Rex Man or write Chain Belt Company, 1694 West Bruce Street, Milwaukee, Wisconsin, for your copy of the interesting booklet, "Here's How to Handle It," No. 332.



## Rex Conveyors

### CHAIN BELT CO. of Milwaukee

When inquiring specify CP8308 — see information request blank, pgs. 2-3

## PRODUCTION

### Laboratory Equipment

Catalog 112 pages contain detailed information on variety of laboratory equipment. Sections are devoted to auto-claves, burners, centrifuges, digestion and extraction, distillation, heaters, hot plates, sieves, stirrers, shakers, titration illuminators and water stills. Catalog on request.

PRECISION SCIENTIFIC CO., Dept. CP, 1750 N. Springfield Ave., Chicago, Ill.

When inquiring specify CP8309 — see information request blank, pgs. 2-3

### Precision Draft Control Units

Useful information on draft control that ties in closely with today's fuel conservation program shows how control devices can effect substantial savings in the fuel consumption of natural draft boilers. Draft control to within 0.01" water gauge is said to be obtained. Booklet on request.

PREFERRED UTILITIES CO., INC., Dept. CP, 1860 Broadway, New York, 23, N. Y.

When inquiring specify CP8310 — see information request blank, pgs. 2-3

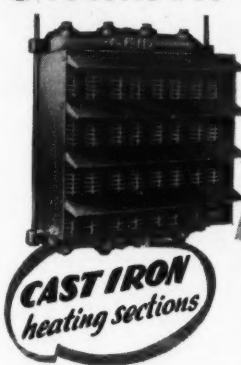
### Handling Units for Stacking and Hoisting

Materials handling equipment including hydraulic lift trucks and pallet trucks as well as models for stacking, tiering and hoisting and handling and transporting dies. Hydraulic elevating tables and platforms are also shown in this two page bulletin.

LYON-RAYMOND CORP., Dept. CP, 1360 Madison St., Greene, N. Y.

When inquiring specify CP8311 — see information request blank, pgs. 2-3

## Install a UNIT HEATER



*that*  
WILL STAND WEAR  
AS LONG AS THE  
PIPES FURNISHING  
STEAM OR HOT  
WATER TO IT

**CAST IRON**  
heating sections

Cast iron GRID Unit Heater is built to last for years — to last longer than any other types of

heating equipment. Its condensers are made in ONE piece — no soldered, brazed or welded connections to become loose — no leaks — no breakdowns — and no maintenance cost.

Engineered and tested to operate with either steam or hot water, up to 250 lbs. steam pressures, each "fin" heating section is made of high test cast iron to cooperate with the war effort. No electrolysis to cause corrosion . . . no heating failures. In the GRID Unit Heater no effort is spared to make it a high quality product, and we're constantly working on improvements to make it better. Catalog and capacity tables are yours upon request.

D. J. MURRAY MFG. CO.,  
WAUSAU, WIS.

**GRID**

Offices in Principal Cities

When inquiring specify CP8312 — see information request blank, pgs. 2-3

# "You can't squeeze water uphill"

## ...so PEERLESS

did it!

The Peerless HI-LIFT shown utilizes single water lifting member consisting of hard chrome helical rotor revolving at half usual shaft speed within resilient cutless stator bearing. Hypocycloidal action literally squeezes water upward. 4" wells or larger. 500 to 3500 gals. per hour.

## PEERLESS HI-LIFT PUMP

Licensed under Mexican Patents U.S. 1502217 and 2028207.

PEERLESS PUMP DIVISION OF FOOD MACHINERY CORPORATION  
301 WEST AVENUE 26, LOS ANGELES 31, CALIFORNIA  
SAN JOSE, FRESNO, CALIFORNIA • CANTON, OHIO

When inquiring specify CP8313 — see information request blank, pgs. 2-3

## UNIFORM ACCURACY FOR WAR WORK



More vital today than ever is the dependable accuracy of South Bend Lathes. Day after day, even under the relentless pressure of war production, these lathes can be relied on to hold close tolerances. This accuracy, plus speed and versatility, is a reason for the selection of South Bend Lathes for hundreds of war production plants. Write for our latest catalog.

"HOW TO  
RUN A LATHE"  
A 128-page book  
on lathe opera-  
tion and care.  
Size 5 1/2" x 8".  
Price 25c.

**SOUTH BEND LATHE WORKS**

South Bend, Ind. Lathe Builders for 37 Years

When inquiring specify CP8314 — see information request blank, pgs. 2-3



## PRODUCTION

### Wool Lined Heat Resistant Glove

*Efficient substitute for asbestos types; well ventilated and easy to put on and remove*



WOOL LINED MITT

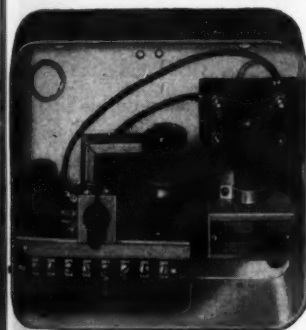
and six inch gauntlet if desired.

INDUSTRIAL GLOVES CO., Dept. CP, Danville, Ill.

When inquiring specify CP8315 — see information request blank, pgs. 2-3

### Adjustable Electronic Time Delay Relay

*Only moving part is fast operating steel encased plunger working in a hydrogen pressure atmosphere displacing the mercury*



ELECTRONIC TIME RELAY

ing mercury relay. Only moving part is fast operating steel encased plunger working in a hydrogen pressure atmosphere displacing the mercury and capable of millions of operations. Time settings are continuously variable within range and may be adjusted to precisely the required operating point. Standard models cover time ranges from .05 to 0.5, 0.10 to 10 and 1 to 100 seconds respectively. Special models can be produced up to five minutes. Contact capacities are available up to seventy-five amperes, either normally open or normally closed.

DURAKOOL, INC., Dept. CP, Elkhart, Ind.

When inquiring specify CP8310 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

It's HEAT ABSORPTION, not WETNESS, that gives water control over fire... SURFACE AREA, not VOLUME, that puts out fires fast!

**WATER**

turned into **WaterFOG**

## DOOMS <sup>EVEN</sup> OIL FIRES, FAST

You'll find in your physics book that speed of heat exchange increases with surface area exposed to heat. (That's the principal of the radiator and the refrigerating coil, too.)

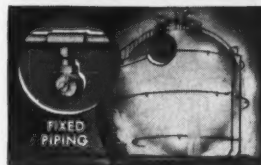
By transforming water into tiny particles — much finer than spray — Rockwood WaterFOG nozzles multiply many times the total surface area of a given volume of water... thus making water (cheap, plentiful) your most efficient fire-fighter on flammable liquid fires!

In addition to cooling fires faster, WaterFOG particles, being light, stay longer in the combustion area, instead of plunging into the liquid, agitating it, inciting further vaporization. They float gently onto the surface, absorbing heat from the vapors and from the liquid — and then, turning into steam, they expand, smothering the fire!

"Flash-back" is prevented. Costly chemicals are saved. Water damage is lessened. Safe to use on electrical fires. Write for Bulletin 123.

**ROCKWOOD**  
**WaterFOG**

*Water Engineered by  
Rockwood Cools, Confines,  
Smothers Oil Fires*



### 3 WAYS TO PUT OUT FLAMMABLE LIQUID FIRES

1. Quench the burning vapors
  2. Lower liquid temperature to retard vaporization
  3. Diminish supply of oxygen
- WaterFOG does all three... with water... faster!**

WaterFOG is created by impinging streams from specially-designed Rockwood nozzles — engineered in correct particle size, fog pattern, and velocity for your conditions. Fixed piping installations, hose nozzles and applicators. Rockwood installations approved by Underwriters' Laboratories and Associated Factory Mutuals; used by Navy, Coast Guard, hundreds of industrial plants. Executives! colored movie (16 mm.) showing tests of Rockwood WaterFOG is available.

**ROCKWOOD SPRINKLER COMPANY**  
76 Harlow Street, Worcester, Mass.

Specialists in Fire Protection Engineering,  
Equipment and Installation since 1907

### Complete WaterFOG Fixed Piping Installation Protects Reactors

This photograph illustrates the use of a Rockwood-engineered system of WaterFOG fire protection — consisting of fixed piping, WaterFOG heads, valves, and automatic control devices.

In planning such systems, Rockwood engineers (authorities on hydraulics, as



applied to fire protection) consider all factors involved in each hazard — spacing of heads, distance between heads and hazard, obstructions, etc. — in order to arrive at the most complete protection.

WaterFOG fixed piping installations are being used to assure both the prompt detection and the quick, automatic extinguishment of fires in fuel oil, kerosene, mineral spirits, and other flammable liquids. Typical WaterFOG-protected hazards also include rubber spreaders, degreasing machines, dryers, churn rooms, coating machines, transformers.



### Portable WaterFOG Equipment for Regular Fire Hose Lines

This photograph shows (A) WaterFOG applicator which discharges low-velocity WaterFOG in ball shape; and (B) SG-40 Nozzle to which applicator is attached. With applicator removed and FOG Tip (C) inserted, SG-40 Nozzle will discharge either high-velocity WaterFOG with considerable forward projection, or from (D), a straight stream for attacking inaccessible places or rooting out deep-seated fires.

The 1½" SG-40 Nozzle takes 4' or 10' applicator; the 2½" size takes 12' applicator.

When inquiring specify CP8317... see information request blank, pgs. 2-3

**NOW READY...**

**The New  
DARLING  
VALVE  
CATALOG  
for  
All Industries**



*It gives you complete, up-to-the-minute general data and specifications for use in your plant design, construction and maintenance. This new Darling catalog is actually a handbook of informative data and information which you will have occasion to use time and time again.*



**Send For Your Copy Today!**

The Darling catalog is ready now and can be mailed immediately. Simply write to Darling Valve & Manufacturing Company, Dept. M, Williamsport, Pa. There is no obligation.



When inquiring specify CP8318 — see information request blank, pgs. 2-3

**SIMPLE-ACCURATE CONTROL  
QUICK-TIGHT SHUT-OFF**

**ROCKWELL  
Blast-Gate  
VALVES** **for  
AIR  
GAS  
STEAM  
LIQUIDS**

**For Any Temperature  
Corrosion Resistant**

Rockwell Blast-Gate Valves offer the advantages of quick movement—full pipe area—tight shut-off—easy adjustment for any flow. Made of any metal in slide and butterfly types with hand pull, lever, hand wheel, chain wheel or special automatic controls for all pipe sizes from 1" to 48" and pressures to 15 p. s. i.

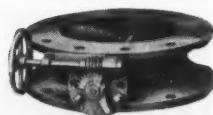
Rockwell Valves save on installation cost—save in service—Catalog No. 402 tells how. W. S. Rockwell Co., 56 Church St., New York 7, N. Y.



Slide Valve—threaded or flanged; pull, lever or wheel control.

"Kwikleen" Slide Valve, as above, with removable clean-out plate for quick clean-out of clogging solids.

Butterfly Valve, flanged type, with lever, hand wheel, chain wheel and automatic control and dial indicator.



When inquiring specify CP8319 — see information request blank, pgs. 2-3

**PRODUCTION**

**New Process Bonds Metal, Wood, Rubber, Plastics And Leather**

*Above materials joined in various combinations; many applications are indicated*

**Uses** — This new bonding process is designed to unite metals with a bond said to be stronger than riveting or spot welding. It is also said to be suitable for joining rubber, synthetic rubber, plastics, leather or wood, to metal, or to each other with a bond stronger than the materials themselves. Now being used in several war applications.

**Description** — This method of fabrication is known as the Reanite Process. Thin sheets of stainless steel or aluminum may be bonded to (Tygon) impregnated plywood to form a light weight, fire-proof, water-proof structural assembly for such applications as prefabricated housing units, kitchen cabinets, furniture etc. Composite metal and plastic parts may be molded; rubber and metal spring assemblies for smooth, soft quiet and vibration free riding are said to be a possibility. Laboratory tests seem to indicate that it would require a direct pull in excess of 30,000 pounds to separate two six inch square pieces of steel bonded by this method. On standard tensile testing machines it was found that the method develops a bond metal to metal ranging from 1000 lbs. per sq. in. to as high as 300 lbs. per sq. in. The bond achieved between rubber and metals the developers of the process state runs between 900 lbs. to as high as 1500 lbs. per sq. in. On tests the results reported were that with bonds formed between natural rubber, synthetic rubber, plastics, leather and wood, the materials themselves gave way before the bond.

**Application** — Application of Reanite Process is simple. The surfaces to be joined are brushed, dipped or sprayed with the Reanite. After drying mild heat and pressure are applied. The joint is said to be unaffected by salt water and as non-corrosive to metals, to possess excellent corrosion resistance itself and have high dielectric strength. Indicated uses include fabrication of sound and vibration dampener units, instrument mounts and many others. Additional information is available upon request.

UNITED STATES STONEWARE CO., Dept. CP, Akron, Ohio.

When inquiring specify CP8320 — see information request blank, pgs. 2-3

**New Fat Recovery Basin Is Made  
Of Non-Critical Materials**

*Contributes to vital salvage and also aids in keeping sewers free*

**Uses** — This fat recovery basin has been designed to meet the requirements of meat packers, food processing plants and others who are interested in installing catch basin equipment to salvage fats and oils.

**Features** — Basin is made from non-critical materials. **Description** — Basin is non-corrosive, completely sanitary and has high recovery efficiency. It clears the waste waters in plants of fats and oils before they reach the sewer helping to eliminate costly sewer cleaning as well as stream pollution problems. These units known as Standard Victory Basins measure five and one half feet long, four feet wide and four feet deep. Other sizes may be procured however.

HOTTMAN MACHINE CO., Dept. CP, Philadelphia, Pa.

When inquiring specify CP8321 — see information request blank, pgs. 2-3

**PREVENTING POLLUTION  
of streams and sewage  
WITH VIBRATING LIQUID SCREENS**

Indications point to the possible solution of the pollution problem. One means is through the use of the Robins Hydrex Screens. The finely-woven wire cloth plus the vibrating action of the screens tends to trap and coalesce the industrial waste in fluids, creating an acceptably non-polluted effluent—and a self-discharged, coagulated solid which can be readily discarded or reclaimed. Robins Hydrex Screens may be installed at any point in the flow, requiring small space, little attention—and no auxiliary apparatus. The subject of preventing pollution merits investigation. A letter addressed to Dept. CP-11 will bring further facts.

**For Material Aid in  
Materials Handling**

**...It's ROBINS**

ENGINEERS • MANUFACTURERS • ERECTORS

**ROBINS  
CONVEYORS  
INCORPORATED**  
Founded in 1876 as Robins Conveying Belt Co.  
PASSAIC • NEW JERSEY

MATERIALS HANDLING MACHINERY

When inquiring specify CP8322 — see information request blank, pgs. 2-3

**FOR EVERY FILTER NEED  
there's a  
SWENSON**



Rotary Drum Type



Top Feed Filter



R. L. P. Filter

Swenson builds filters for every process. Rotary Drum Vacuum Filters are used for granular materials and operate at high capacities. Top Feed Filters are employed to dewater and dry coarse, crystalline solids. Rotary Leaf Pressure Filters have special adaptations for clarification processes. Send for bulletins.

Swenson Evaporator Co. (Div. of Whiting Corp.), 15667 Lathrop Ave., Harvey, Illinois.

**SWENSON**

EVAPORATORS • FILTERS • CRYSTALLIZERS

CHEMICAL PREVIEW



## PRODUCTION

### Direct Fire Heater Delivers Processing Air At 150° - 350° F.

*Temperatures obtained from heaters with carbon steel combustion chambers by means of recirculation*

**Uses** — These direct fired heaters have been designed to deliver output temperatures between 150 and 350 degrees F with the heated air free from contamination without the use of critical alloy steels. For chemical and dehydrating processes.

**Features** — Fuel economy and a result of high efficiency of heat abstraction and negligible radiation losses. Installation may be made quickly and easily, and flexibility in this connection is particularly advantageous as regards later plant expansion. Heaters are available for oil, gas or coal and heaters designed for coal can be quickly converted to oil or gas when conditions make their use practical.

**Description** — The high processing temperatures desired are obtained from these heaters with carbon steel combustion chambers by means of a recirculating device. The recirculating principle allows heated air to be fed back to the heater's intake, so that the normal temperature rise obtained by wiping air around a carbon steel fire box will produce temperatures up to 350 degrees F, according to the percentage of air that is recirculated. The percentage is regulated by a damper in the recirculating duct. To produce 350 degrees F, eighty percent recirculation is required. Bulletin Number 510 is available on request.

DRAVO CORP., Dept CP, 300 Penn Ave., Pittsburgh, Pa.

When inquiring specify CP8323 — see information request blank, pgs. 2-3

### Precise Speed Belt Mixer Holds Motor Away From Tank Fumes

*V-type belts, pulleys interchangeable; protective belt slipping protects motors from burnouts*

**Uses** — This belt-type of portable industrial mixer is adaptable to a wide variety of applications and its use in processing numerous heavy materials is indicated.

**Features** — The motor hangs outside the tank and away from the path of destructive mixing fumes. The balanced hanger carries the weight of the unit below the center of gravity so no tension of the clamp is required to hold the mixer in place. V-type belts and pulleys are readily interchangeable for low or high speed mixing decreasing extra equipment requirements. Precise mixing speeds easily obtained.

**Description** — Either AC or DC low cost motors may be used. Protective belt slipping can be arranged to prevent motor burn outs when viscosity increases, a desirable advantage when mixing such materials as syrup or wax. Low speed and large propellers increase the mixing speed by allowing heavy liquids sufficient time to flow into the propellers. This tends to prevent pockets and beating-in of air which might be detrimental to the material being mixed. Bearings are combination radial thrust type. Shaft is one complete piece and combined with slow speed rigid coupling allows for longer shaft length for deep tanks. Propellers are held on the shaft only by set-screws. Mixer complete — with AC 110 volt 60 cycle motor; 2 balanced propellers; 30 inch steel shaft — 10 foot cord and attachment plug. Descriptive literature on request.

UNITED ELECTRIC MOTOR CO., Dept. CP, 178 Centre St., New York, N. Y.

When inquiring specify CP8324 — see information request blank, pgs. 2-3

NOVEMBER - DECEMBER, 1943

## How to connect GLASS PIPING to your present equipment

It is easy to connect glass piping to any pipe line, valve, pump or tank in your plant. If you have hesitated about installing a trial piece of glass piping or a short line because of the possible difficulty of making a tight joint with your present equipment, here is the answer to your problem.

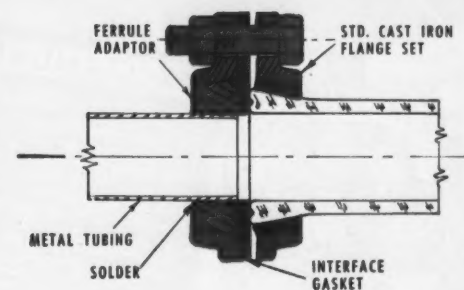
Use the proper adaptor flanges, drawings of which are shown herewith. You can now purchase these standard stock adaptor flanges to connect Pyrex piping directly to:

STEEL	PORCELAIN
CAST IRON	GLASS-LINED PIPE
LEAD	HARD RUBBER
STAINLESS	RUBBER-LINED METAL

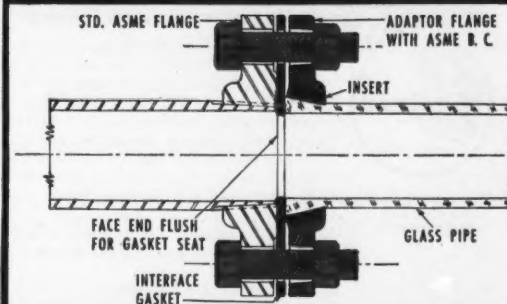
With these adaptor fittings it is a simple matter to discover to your own satisfaction just where you can profitably use PYREX piping—places where you can take advantage of its remarkable resistance to all acids and alkalis (except HF), resistance to abrasive action of slurries and gritty particles, and its ability to withstand thermal shock. Its crystal-clear transparency and its long life and reasonable cost may mean that it is the best piping for that line which has been giving you trouble. Here at Corning our research facilities have helped to find the answers to many troublesome piping problems. Corning engineers offer you the benefits of this experience. Send in the coupon or write to the Industrial Division, Corning Glass Works, Corning, N. Y.

"PYREX" is a registered trade-mark and indicates manufacture by Corning Glass Works, Corning, N. Y.

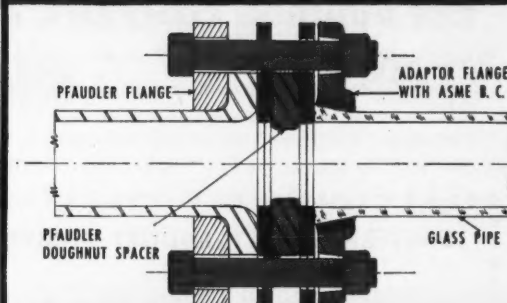
**CORNING**  
Glass Works  
Corning, New York  
**Pyrex Industrial Glass**



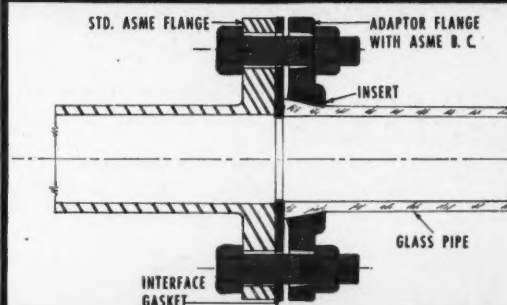
Connection to metal tubing



Connection to A.S.M.E. screwed flange



Connection to Pfaudler enamel-lined



Connection to A.S.M.E. flanged fitting

#### \*Accessory parts in red furnished by Corning

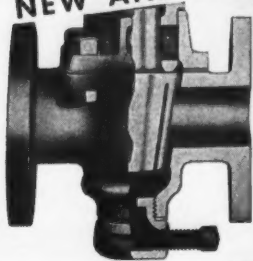
Corning Glass Works, Industrial Division, Dept. CP  
Corning, New York

Gentlemen: I would like glass piping information immediately on the subjects I have checked below. I understand there is no obligation.

☐ Installation Manual ☐ PYREX Valves  
☐ PYREX Piping and Heat Exchangers ☐ Adaptors  
Name.....  
Firm.....  
Street.....  
City and State.....

When inquiring specify CP8325 . . . see information request blank, pgs. 2-3

## NEW AND HIGHER STANDARDS for PLUG VALVES



Durco plug valves have important new features that set higher standards for acid-handling valves.

With bodies of stainless steel, the plugs can be had in stainless steel or in the high silicon iron. Duriron and Durichlor. They can also be converted from plain plug to the plunger-release type, or from lubricated types to combination lubricated and plunger-release. Or bodies and plugs can be all Duriron (or Durichlor)—the preferred type for many services.

### CHECK YOUR PLUG VALVES

1. Are they practically proof against galling? Duriron and Durichlor are extremely hard and do not gall like plugs of softer metal.
2. Are they convertible from plain plug types to plunger-release types? By simply changing the bottom fitting of Durco valves, plain valves may be converted to plunger-release valves; the lubricated types to combination lubricated and plunger-release.
3. Are they highly corrosion-resistant? The wide range of Durco alloys allows selection of the most efficient alloy for handling your corrosives.
4. Are they resistant to abrasion? Duriron and Durichlor are unexcelled for handling slurries and other abrasive solutions.



By changing bottom fitting plain plug valve may be converted to "P-R" type.

## THE DURIRON COMPANY, Inc.



DAYTON, OHIO, U. S. A.

Specialists in

Corrosion-Resistant Equipment



When inquiring specify CP8326 — see information request blank, pgs. 2-3

## EASTERN HUSKY MIDGET PUMPS

are built for:

Efficient Dependable Performance in  
A Small Space without Excess Weight

These ruggedly-designed units will solve your pumping problems. Centrifugal, Rotary Vane, or Gear models with Electric Motor (1/100 to 3/4 H.P.), Compressed Air or Belt Drives. Pump Construction of Cast Iron, Bronze, Monel Metal, Stainless Steel, Hastelloy and other corrosion-resistant alloys.

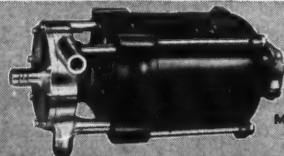
Pressure to 150 lbs. per square inch — Volume to 30 G.P.M. — Weight from 3 lbs.

Send us the details of your application for a prompt recommendation on properly-filled pumps. Catalog on request.

EASTERN ENGINEERING COMPANY

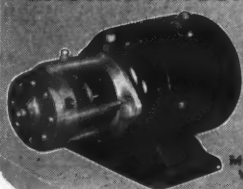
49 Fox Street

New Haven 6, Connecticut

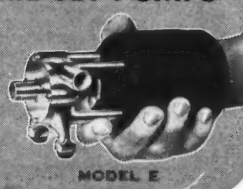


MODEL D-10

## EASTERN HUSKY MIDGET PUMPS



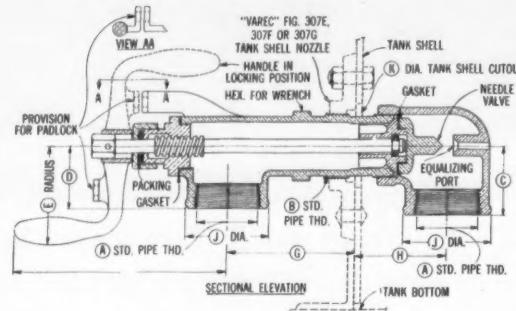
MODEL VT-5



MODEL E

When inquiring specify CP8327 — see information request blank, pgs. 2-3

## PRODUCTION



SIZES, DIMENSIONS, WEIGHTS

Size	A	B	C	D	E	F	G	H	J	K	L	Approx. Wt. lbs.	Approx. Wt. lbs.
2"	2	2	2 1/2	2 1/2	3 3/4	6 3/4	5	2 3/4	3 1/2	3 1/2	2 1/2	15	18
3"	3	3	3 1/2	2 3/4	4 3/4	7 3/4	6	3 3/4	4 1/2	4 1/2	2 3/4	25	30
4"	4	4	4 1/2	4 1/4	5 3/4	8 3/4	7	4 3/4	5 3/4	5 1/2	3 3/4	55	65

## Excess Tank Bottom Water Removal Simplified By Anti-Freeze Valve

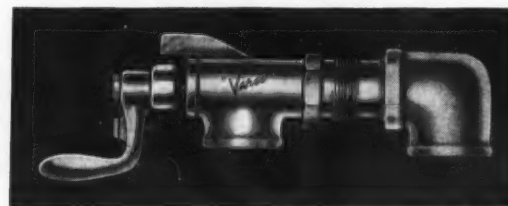
Needle valve eliminates freezing; unit adaptable to any size, type of tank; available with 60 or 90 elbow; provision made for padlocking

**Uses** — To simplify the troublesome procedure of removing excess water from the bottom of the tank is the service for which this anti-freeze water draw off valve is designed. **Operation** — Danger of freezing is eliminated by use of a needle valve. When the main valve is opened, the needle valve closes the equalizing port so that bottom water only is withdrawn. When draining operation is completed and main valve is closed, equalizing port is automatically opened. This permits the tank product to displace any water remaining in the valve.

**Description** — Travel of the valve is attained by Acme threads. Inner valve does not rotate insuring perfect alignment and preventing scoring of the seat or inner valve. Valve can be supplied without needle and equalizing port for tropical service. The unit is adaptable to any size or type of tank and is available with a 60° or a 90° elbow. Manufactured of all bronze as standard it can be furnished in other material upon special order. Provision is made for padlocking. Suggestions and detailed information in regard to individual tank equipment problems are available. This valve is one number in a line of diversified tank equipment, gas control and safety devices. Catalog-handbook will be sent upon request.

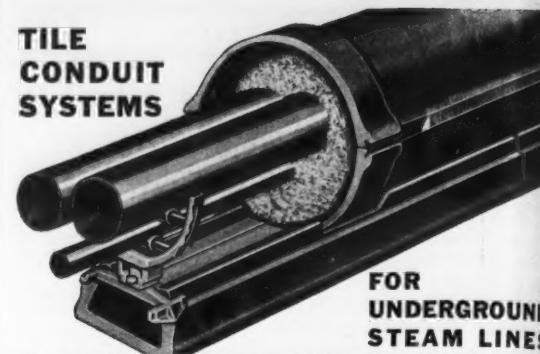
VAPOR RECOVERY SYSTEMS CO., Dept. CP, 2820 No. Alameda St., Compton, Cal.

When inquiring specify CP8328 — see information request blank, pgs. 2-3



DRAW-OFF VALVE for any size, type of tank

## TILE CONDUIT SYSTEMS



FOR UNDERGROUND STEAM LINES

Ric-wil, pioneer in the tile conduit field, has served the country needs on underground steam protection with outstanding leadership since 1910. Today, with material supply, production facilities and plant personnel subjected to severe pressure, it is a point of pride with us that traditional standards of quality are being scrupulously maintained. In spite of heavy demands, we are well equipped to make quick deliveries on all sizes and types of Ric-wil Tile Conduit, as well as on our complete line of Prefabricated Insulated Pipe Units.

### RIC-WIL TILE CONDUIT FOR OIL OR PROCESS LIQUIDS

In this system, conduit is insulated from the exterior, but individual lines are not insulated from one another. A steam or hot water line can thus maintain temperature to keep liquids flowing in the other lines. Insulation is a diatomaceous earth lining, moulded and keyed to inside circumference of tile. May also be used with fibre insulation for steam heat, power and super-heated steam. Applicable to Super-Tile and Cast Iron.

Write for complete information

**RIC-WIL** INSULATED PIPE CONDUIT SYSTEMS  
THE RIC-WIL COMPANY - CLEVELAND, OHIO

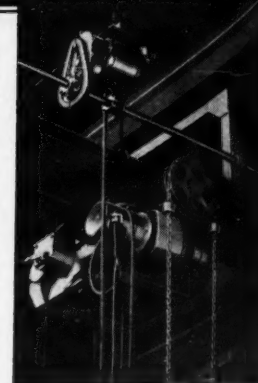
When inquiring specify CP8329 — see information request blank, pgs. 2-3

## MOTOR TRAVEL for Hand Traveled Crane Bridges THE "Northern TRAVELATOR"

Less than half a day required for application—no dismantling of crane—any good mechanic can apply the Northern "Travelator."

It provides pendant push button controlled electric power travel for hand traveled bridges within the range of 10 tons capacity.

The "Travelator" is an inexpensive, thoroughly effective durable device.



**Northern**

WRITE FOR BULLETIN 5

**ENGINEERING WORKS**

2615 Atwater Street, Detroit, Michigan  
Offices in Principal Cities

Northern Crane & Hoist Works Limited, Windsor, Canada

When inquiring specify CP8330 — see information request blank, pgs. 2-3



## PRODUCTION

### Industrial Refrigeration

Industrial refrigeration equipment including sub-zero chests, automatic rivet dispensers, coolant coolers and special units is described in detail in eight page folder. The coolant cooler is capable of cooling both straight oil and oil-water emulsions. Its capacity is 7000 btu's per hr.

REVCO, INC., Dept. CP, Deerfield, Mich.

When inquiring specify CP8331  
— see information request blank, pgs. 2-3

### Small Annealing Furnace Heated By Gas Burner

Belts of 2½ to 7 ins. and wider with square muffles to suit or other sizes available

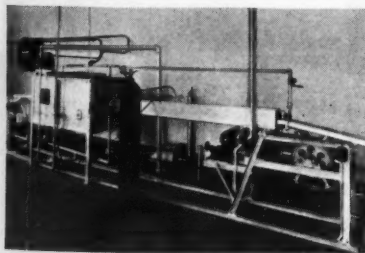
**Uses** — For continuous automatic brazing of copper pieces, silver soldering, sintering or bright annealing of metal strips, band and miscellaneous formed objects that require a uniformly bright high surface finish.

**Features** — Pickling, cleaning, drying unnecessary. Design permits utilization of gas with a gas burner firing from each end of the furnace. Electric heating can also be arranged.

**Description** — Work moves on mesh belt conveyor into enclosed charging neck and then into square muffle, emerging in a long fully enclosed cooling zone, which is water cooled. Dimensions of these parts depend on size and quantity of work and speed of travel. Furnace has rugged steel shell with heavy insulating firebrick lining. Muffle is of Nichrome. Since gas consumption to heat furnace of this size is not enough to warrant use of atmosphere generator, controlled reducing atmosphere is maintained in the muffle and cooling chamber by introducing hydrogen drawn from a cylinder at a controlled rate.

W. S. ROCKWELL CO., Dept. CP, New York, 7, N. Y.

When inquiring specify CP8332  
— see information request blank, pgs. 2-3



FURNACE . . for brazing, soldering

For more information on product at right, specify CP 8333  
... see information request blank between pages 2-3.



For new plant construction or for the modernization of present facilities **FLUOR Engineering and Construction Service is**

## FROM PLAN TO PLANT

WITH A SERVICE that's available nationwide Fluor can build or modernize for you synthetic rubber, toluene, catalytic cracking, isomerization, alkylation, gas transmission, recycling and natural gasoline plants and petroleum refineries.

This service is complete from *plan to plant* — from designing and engineering to construction and completion.

Back of this all-inclusive service are three basic and indispensable assets (1) A skilled organization of 5000 men — from engineers to laborers — trained and equipped for this type of construction. (2) Every needed piece of equipment necessary for any construction job, all owned and maintained by Fluor, and so located throughout the United States that it can be immediately moved to your job. (3) A record of more than 50 years of successful, on-time construction for the oil, gas and allied industries.

Measure these assets in terms of your own construction needs. Then call, write or wire your nearest Fluor office. A Fluor engineer will be glad to discuss your new plant construction or modernization requirements.



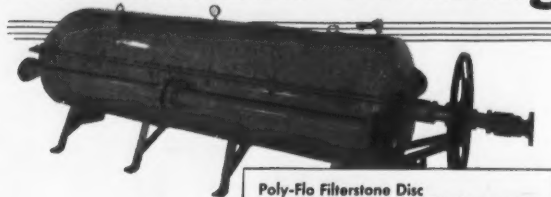
# FLUOR

**DESIGNERS • ENGINEERS • CONSTRUCTORS**

THE FLUOR CORPORATION, LTD., 2500 So. Atlantic Boulevard, Los Angeles 22, Calif. • NEW YORK, PITTSBURGH, KANSAS CITY, HOUSTON

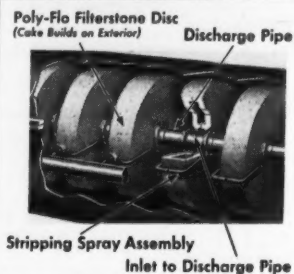


# Mechanized Cleaning



## with this new Clarification Filter...

Swenson-LeVal Filters are built on a new construction principle—using a rigid porous stone support for filter aids. Changes in pressure or temperature will not cause filter cake to channel or crack. Exclusive arrangement of stripping spray makes "fully-mechanized" cleaning possible. No expensive cloths or pads to change. No lint or fibre to get into filtrate. Complete cleaning and precoating requires only 10 to 12 minutes. Many Swenson-LeVal Filters have given users this high-efficiency, low-cost filtering for 8 to 9 years. Capacities to 30,000 gph. Write for details.



## LeVal Filter Company

SWENSON DIVISION OF WHITING CORP.  
927 Wrightwood Ave. Chicago 14, Ill.

When inquiring specify CP8334 — see information request blank, pgs. 2-3

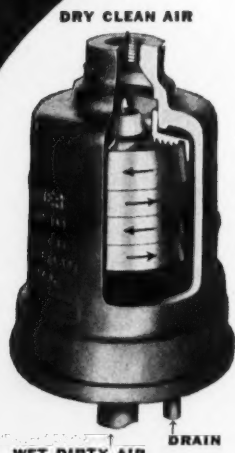
## Air Tools Last Longer

when air lines are equipped with ARIDIFIERS

They remove moisture, dirt and fine scale by centrifugal force.

Hundreds of plants use from 1 to 452 units.

Send for engineering data.



LOGAN ENGINEERING CO.  
Makers of Logan Lathes  
4900 Lawrence Ave.  
CHICAGO, ILL.

## The ARIDIFIER

Dries and Cleans Compressed Air

When inquiring specify CP8335 — see information request blank, pgs. 2-3

## PRODUCTION

### Tube Cutting Unit Vise Assembly Rotates 360° Around Vise Column

*Cuts made at any angle; no complicated adjustments, dial plate quickly locates motor in yoke for the desired bevel cut*

**Uses** — This flexible tube cutting machine is designed for all types of straight and angular cut-off operations on tubes, bars, formed and extruded shapes in both ferrous and non-ferrous metals.

**Features** — The arm carrying the motor and roller head assembly will turn about the column 360 degrees. This enables the operator to make cuts at any angle without complicated adjustments. Arm is supported on 7 inch semi-steel column. This machine has a vise assembly so designed as to permit rotating the whole assembly in a 300 degree arc around the vise column with an air control valve located accessible to the operator.

**Description** — The entire motor, yoke and cutter assembly is carried on a roller head equipped with eight heavy duty bearings, assuring maximum rigidity. A dial plate located on the motor permits quick locating of the motor in the yoke for the desired bevel cut. The dial has locating slots at the horizontal, 45 degree and vertical positions for quick, positive location. A clamp is provided for intermediate positions. This same principle is carried out on the vise column where a dial permits the location of the vises at the desired angle at any point in the 300 degree arc. Other features of construction are conveniently located elevating crank, finger tip push button control, rugged chain feed attachment with feed handle located at front of arm. The column and arm supporting the roller head are assembled on a super rugged prefabricated pedestal which is welded on a heavy steel plate base to insure stability. Up to 4 inch sections can be held in the air vise. Vise stroke is 5 inches. Vise movement front to back 7 inches. Vise movement laterally 19 inches. Air cylinder bore 2 1/2 inches. Motor 10 HP (3400 rpm) or 5 HP (1800 rpm). Literature on request.

DE WALT PRODUCTS CORP., Dept. CP, Lancaster, Pa.

When inquiring specify CP8336 — see information request blank, pgs. 2-3

### Fire Extinguishing Dry Chemical

*Used in maker's equipment provides long stream — helpful to operators in knocking down fire at a safe distance*

**Uses** — Dry chemical for use in maker's extinguisher. Wide application to fire in industrial plants and particularly suitable for extinguishing fires in electrical equipment.

**Features** — This new dry chemical is a refinement and improvement over the product produced for some time by this organization providing even greater effectiveness. Characteristic properties of water repellency, non-toxic quality and non-caking, non-corrosive features are retained. Provides smothering action, reduces flashbacks.

**Description** — The chemical and extinguisher provide effective range of stream, the long range being especially advantageous to inexperienced operators who are enabled to knock down fire from safe distance. Priority not required for this chemical as no critical materials are used. Approved by Underwriters' Laboratories and Factory Mutual Laboratories. Complete information on request.

Du GAS ENGINEERING CORP., Dept. CP, Marinette, Wis.

When inquiring specify CP8337 — see information request blank, pgs. 2-3

## THE WHEELS TOO, SHOULD BE "ENGINEERED"



### MODERN WHEELS for PORTABLE EQUIPMENT

### BARROWS

### CARTS

### TRUCKS

### FARM TOOLS

### TRACTORS

### ROAD MACHINERY

### ETC., ETC.

Whether the wheels you buy are for materials handling equipment or for wheeled products designed to perform a specific job — those WHEELS are IMPORTANT. They should be Round, True, Ample Strong and Lasting. Their cost should be in keeping with the operating or competitive conditions involved.

For more than fifty years we have been supplying the wheel needs of American industry. Submit your wheel problems to French & Hecht engineers for design recommendations where special wheels are required—or—for recommendation and prices on the many standard Spoke, Cast or Pressed Wheels we can supply, with or without rubber tires. Your inquiries will command our prompt attention.

Write for CATALOG 3G



## FRENCH & HECHT, INC.

DAVENPORT, IOWA

Wheel Builders Since 1888

When inquiring specify CP8338 — see information request blank, pgs. 2-3

## Investigate the 1000 lb. capacity ELECTRIC PONY EXPRESS

One girl replaces 6 men



### Quickest stop-and-go Plant Pick-Up

Not a lift truck but America's fastest, safest factory pick-up (note operator's convenient driving position)—18 square feet platform capacity (36" x 78")—carries merchandise longer than the truck—speed to 6 miles per hour in either direction—foot operated hydraulic brakes—operates full shift without recharging or changing batteries—worm gear drive for quiet trouble-free service.

Write for catalog.

ROCKY MOUNTAIN STEEL PRODUCTS, INC.  
1360 Wall Street • Los Angeles 15, California

When inquiring specify CP8339 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## PRODUCTION

### 500 Pound Capacity Welding Positioner

*In hand and motor operated models; with bases for bench work or for height adjustment from floor*

**Uses** — Designed to handle loads up to five hundred pounds with the center of gravity of load 6 inches away from the table top with a 6 inch eccentricity.

**Features** — Twenty-six inch diameter circular table top is T-slotted simplifying the clamping of work to it.

**Description** — These positioners are available in hand or motor operated models. Well suited to work ordinarily handled by women welders. Motorized unit includes standard make variable speed drive providing a speed range of up to 1 rpm of the table top. Tilting range is 135 degrees from the horizontal or 45 degrees beyond vertical providing "down under" position for all welds. All gears are of the cut tooth type. The machine can be furnished with a regular base for bench work or with a sub-base giving a height adjustment from 27 inches up to 42 inches from the floor line to the table top. A clutch arrangement permits free rotation of the table top by hand when required. The motorized units can be supplied with hand wheel instead of motor for tilting if desired. Descriptive bulletin number 199 illustrating and describing these units will be furnished on request.

RANSOME MACHINERY CO., Dept. CP, Dunellen, N. J.

When inquiring specify CP8340  
— see information request blank, pgs. 2-3

### Visual Pipe Fittings

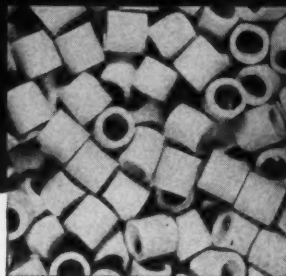
A variety of visual pipe line fittings are described in an attractive illustrated bulletin. Included in the selection offered are the following types: "full-view" flow glass, a standard type of fitting which is for horizontal pipe lines but may be used in vertical lines also. When for downward flow, flap-per is omitted. Also drip glass for distillation apparatus; sight tubes for low pressure lines. Although not to be classed as flow meters these fittings are designed to enable experienced operators to estimate the rate of flow with reasonable accuracy. The fittings are fabricated of all castable metals and Pyrex glass. Bulletin Number 43 on request.

HENRY E. JACOBY, M. E., Dept. CP, 205 E. 42nd St., New York, N. Y.

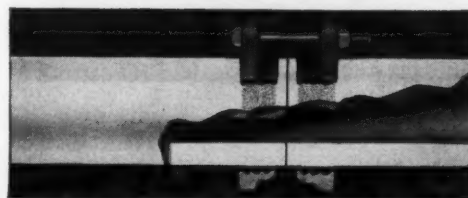
When inquiring specify CP8341  
— see information request blank, pgs. 2-3

For more information on product at right, specify CP 8342  
... see information request blank between pages 2-3.

## WHEN BIG PRODUCTION INVOLVES EFFICIENT HANDLING OF CORROSIVE LIQUIDS



Raschig rings of Lapp Porcelain facilitate gas absorption processes by prohibiting contamination, and by standing up without crumbling under longest, most severe duty.



Lapp Chemical Porcelain Pipe is available in all standard sizes up to 8" inside diameter. Its ground ends permit installation with thin hard gaskets, eliminating at its source the chief cause of trouble in most corrosion-free pipe.



The Lapp Valve is designed to bring liquids into contact only with porcelain. Fine grinding, polishing and lapping of bearing surfaces—and a unique spring washer arrangement—assure smooth action, and a permanently maintained seal, even under vibration and thermal change.

## Lapp Chemical Porcelain is the first...and quickest...answer

**TO** installations for industrial-scale processing of corrosive liquids, Lapp Chemical Porcelain offers notable advantages:

**QUICK AVAILABILITY.** None of the materials of porcelain itself is on the critical list. Lapp facilities are adequate for the production of a large volume of porcelain pieces. For pipe flanges, valve hardware and other metal parts, reasonable priority ratings are sufficient for nearly anything can be put on a delivery schedule to fit any construction program.

**CHEMICAL PURITY.** As a material of construction, Lapp Porcelain brings the purity always associated with laboratory porcelain to industrial processing. Completely iron-free, it is a dense, thoroughly-vitrified non-porous body, smooth and corrosion-free.

**STRENGTH AND LONG LIFE.** The fragility which the word "porcelain" sometimes suggests is not a property of Lapp Porcelain. This material is remarkably rugged, able to withstand mechanical shock of surprising intensity. As a major contributing factor in its purity and long life both, is its complete non-porosity—it does not absorb the liquids exposed to it. The only exposure is on the surface... the body cannot be weakened by the capillary forces of penetrating liquids.

**TO** A phone call or letter will bring a quick answer as to how Lapp Porcelain can help you meet your processing problem, quickly and with top production performance. Lapp Insulator Co., Inc., Chemical Porcelain Division, LeRoy, N. Y.

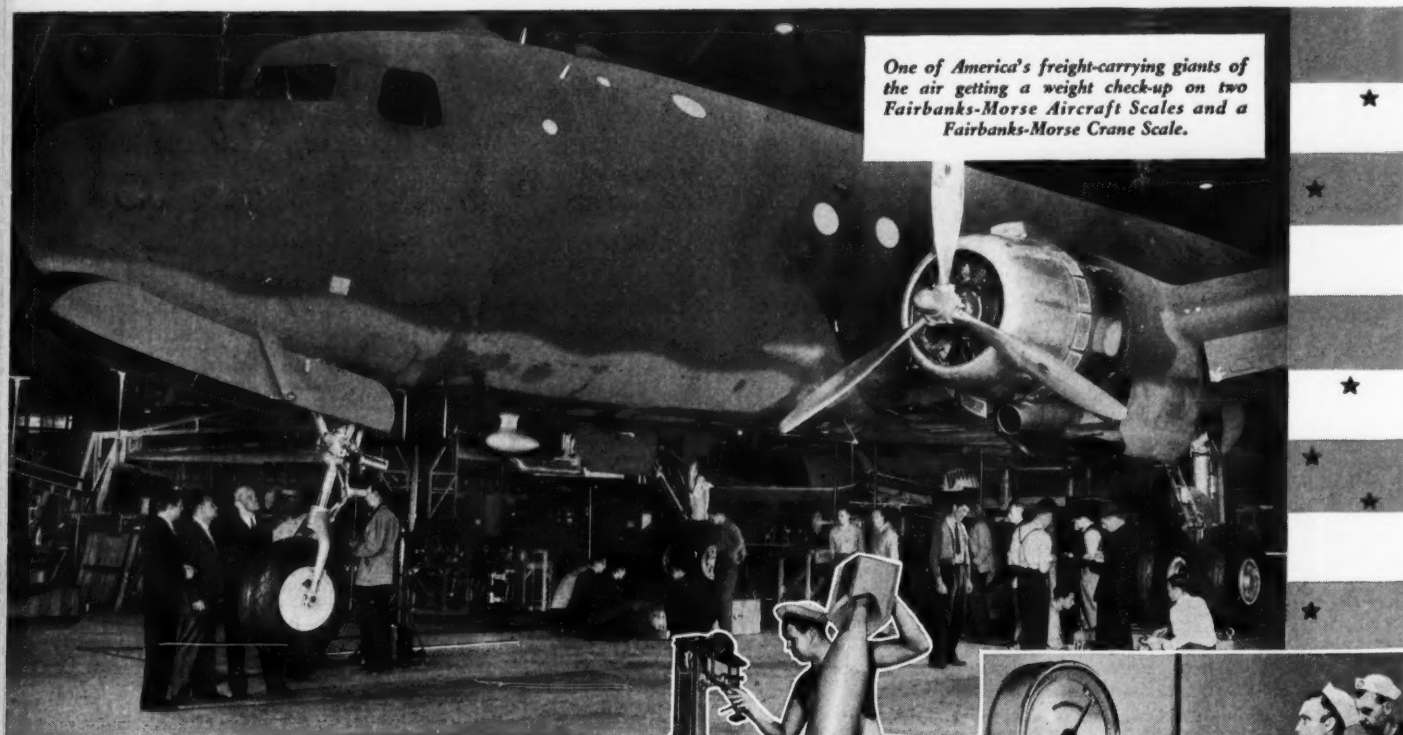


# Lapp

## Chemical Porcelain

Valves • Pipe • Raschig Rings

# Fairbanks-Morse Scales in Warwork

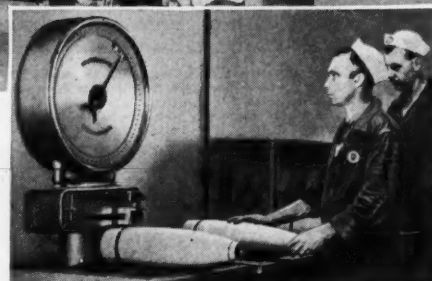


One of America's freight-carrying giants of the air getting a weight check-up on two Fairbanks-Morse Aircraft Scales and a Fairbanks-Morse Crane Scale.

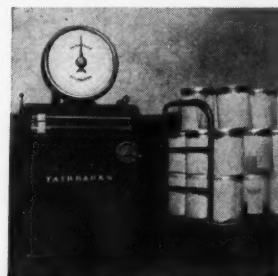
• **WARWORK** means *weigh-work* for Fairbanks-Morse Scales. They're weighing munitions . . . food . . . chemicals . . . tanks . . . aircraft . . . shells . . . just about everything, in fact. They are weighing at speeds which human hands can't match. They're weighing with accuracy that human eyes can't equal. They're working in endless shifts that human stamina can't endure. They're helping to speed up America's war effort on the production front, for Fairbanks-Morse Scales are "at home" on the production front, in peace or in war. Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago, Illinois.



Weighing an "egg" for the Axis.



Correct weight for accurate gunnery.



Frozen eggs—NOT for the Axis!



Weighing charging materials at iron works furnace.

## PRODUCTION

### Wind-Up Machine For Wire And Tapes

*Combination variable speed and hydraulic synchronizing equipment*

**Uses** — As wind-up machine for wire, cable, cords, rope, paper, tapes, textiles and coated fabrics.

**Features** — This machine is a complete self-contained unit with combination variable speeds and hydraulic synchronizing equipment designed to provide constant speed and constant tension within a variable production range. By arrangement of adjustable counterweights, wire tension can be varied from a few ounces to hundreds of pounds.

**Description** — The machine comprises a demountable reel stand, multi-wrap large diameter capstans, constant but variable tension mechanism and an adjustable lever winder. It is also provided with means for driving assisting capstans which are required on some grades of fine wire being processed through multi-coat finishes. It is motor driven and requires no outside source of power or synchronization. Originally built for use in connection with cable lacquering equipment for uniform and concentric finishes in impregnation and coating of wire and cable insulation. Available in two standard sizes. It is also offered in higher operating speeds for extrusion wind-up in the use of rubber or synthetic insulation materials and continuous wind-up machines of the same basic design with high speed cross over are available. Unwind stands are also supplied in standard sizes for semi-automatic operation. The operator simply rolls the reel into position and steps on a foot pedal to raise the reel and set a counterweighted tension brake simultaneously. **INDUSTRIAL OVEN ENGINEERING CO., Dept. CP, 11621 Detroit Ave., Cleveland, Ohio.**

When inquiring specify CP8343  
— see information request blank, pgs. 2-3

### Shipping Seals

Catalog lists tamper-proof lead and wire seals. Manufacturers of precision instruments, recording meters and like equipment will find listed seals for specific needs. Also included is data on precision die metal laminations, metal stampings, embossed metal tags and special wires. Catalog available on request.

**CHICAGO CAR SEAL CO., Dept. CP, 634 Western Ave., Chicago, Ill.**

When inquiring specify CP8344  
— see information request blank, pgs. 2-3

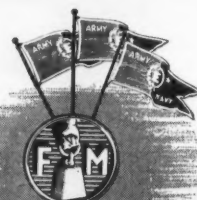
For more information on product at left, specify CP 8345  
... see information request blank between pages 2-3.

## FAIRBANKS-MORSE

DIESEL ENGINES  
PUMPS  
MOTORS  
GENERATORS  
WATER SYSTEMS  
SCALES  
STOKERS  
FARM EQUIPMENT  
RAILROAD EQUIPMENT



# Scales



BUY WAR BONDS



## PRODUCTION

### High Frequency Heating Units Reduce Plastics Molding Time

*Molding pressures lowered production increased, quality improved*

**Uses** — For heating non-metallic materials uniformly throughout. Used in wood working, wood-fabricating fields; in processing of plywoods and laminated woods. Numerous successful applications include: cellulose, paper, textiles, powders, felts, ceramics and rubber. Particularly valuable in connection with molded plastics.

**Features** — This method of heating is said to make possible increased production and quality with existing press and mold equipment. Units available in wide range of sizes. Models designed for plastics work with electrodes within a cabinet. Preheating and molding time cycles greatly reduced.

**Description** — Similar in some respects to a giant radio set these high frequency units are easily operated. The units embody high voltage transformers, rectifier tubes, high frequency tubes, condensers. There are practically no moving parts. The models best suited for use in molding plastics have single knob control and one meter and are semi-automatic. Skilled workers are not required. The units utilize whatever frequency is best suited for the particular requirements whether low or ultra-high. The uniform heating of the material to molding temperature assures complete filling of the mold and elimination of weld lines. Heating is uniform throughout the material regardless of size, thickness or shape. Conductivity ceases to be a factor. Much lower mold pressures are permissible. Units enclosed in cabinets in both stationary and portable models. Capacities range up to 300 KW per hour.

GIRDLER MFG. CO., Dept. CP, Louisville, Ky.

When inquiring specify CP8346  
— see information request blank, pgs. 2-3

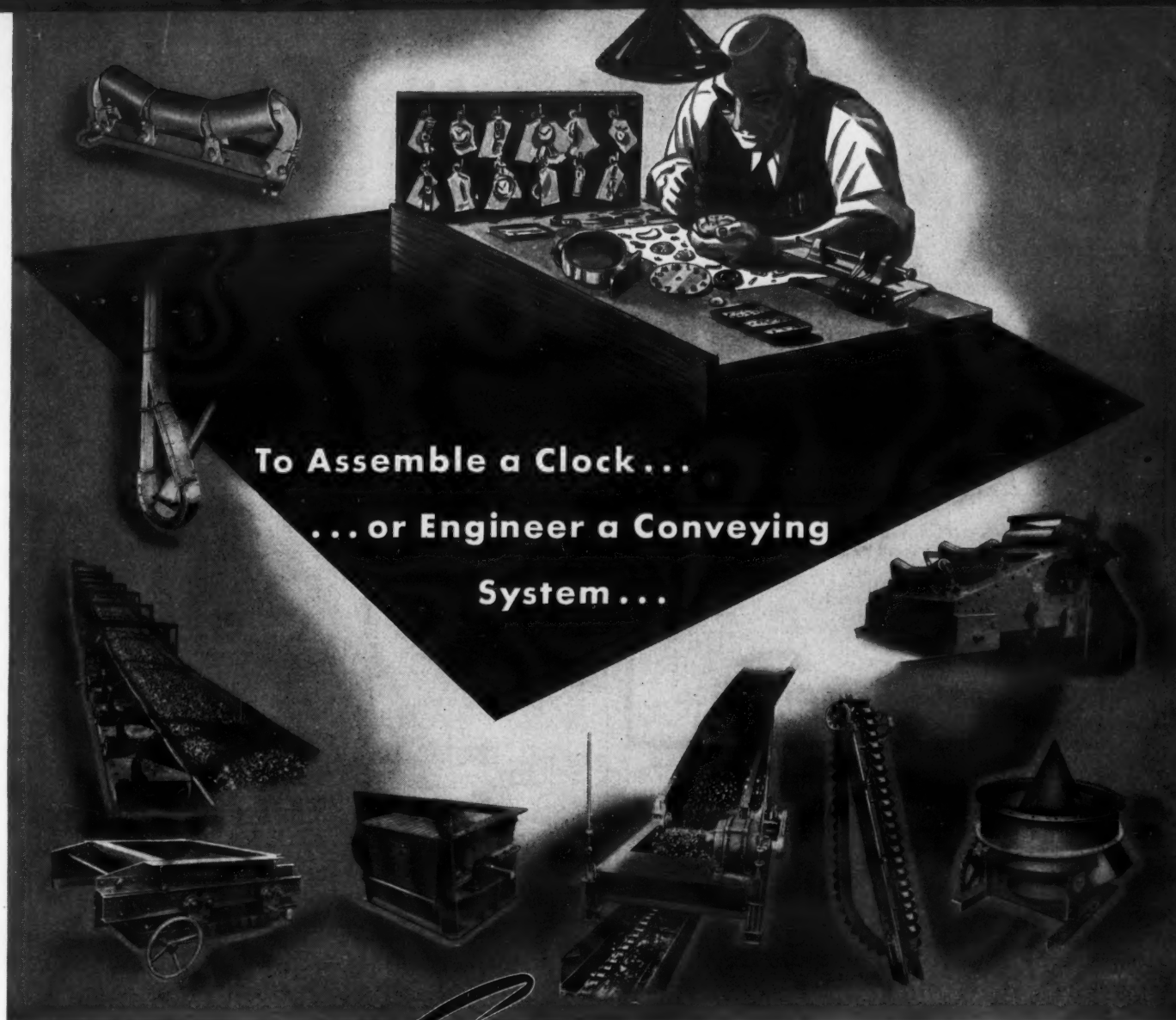
### Air Conditioning and Refrigeration Equipment

Hermetically-sealed compressor is illustrated and described in 20 page booklet which also includes explanations and diagrams on air conditioning and air conditioning equipment and industrial refrigeration units from 1; 100 hp. Booklet SAC-0201 on request.

WESTINGHOUSE ELEC. & MFG. CO., Dept. CP, E. Springfield, Mass.

When inquiring specify CP8347  
— see information request blank, pgs. 2-3

For more information on product at right, specify CP 8348  
... see information request blank between pages 2-3.



To Assemble a Clock...

...or Engineer a Conveying System...

It Takes

*Experience*

To Make Them Tick!

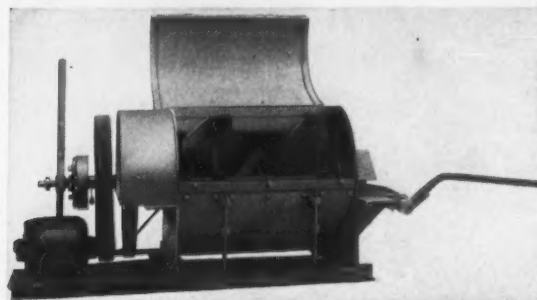
Whether it's putting together the numerous intricate parts of a clock... or assembling the many different, complex kinds of conveying equipment that makes up an efficient material handling system... experience is indispensable. This is a qualification you will find in abundance at Stephens-Adamson, a leading designer and manufacturer of handling equipment for over 41 years.

STEPHENS-ADAMSON MFG. CO., 11 Ridgeway Avenue, Aurora, Illinois

That's why it will be decidedly worth your while to discuss present or post-war conveying methods with an S-A engineer. Make a date now for such a discussion—either as a step toward putting present handling operations on a more efficient basis, or getting a head start toward the solution of new problems connected with peace-time production.

**STEPHENS-ADAMSON**  
MFG. CO.

*Designers and Manufacturers of All Types of*  
**BULK MATERIAL HANDLING EQUIPMENT**



## 5 Reasons Why the Multi-Mixer Has more advantages

1. A better mix in less time
  2. Multi special arranged paddles
  3. All material in action
  4. Well built and dust-proof
  5. Fully equipped with SKF bearings
- Built in sizes 3 to 60 cu. ft. Motor drive or geared head motor drive or tailor made to fill your requirements.  
Write for full information.

**The Multiplex Concrete Machinery Co.**  
Elmore, Ohio

When inquiring specify CP8349 — see information request blank, pgs. 2-3

## Pumps for MODERN INDUSTRY

Type AD Hor. Split Case,  
Two Stage Centrifugal

Type GMC  
Close-Coupled  
Centrifugal

Type OD Hor. Split Case,  
Double Suction Single  
Stage Centrifugal

Type GGU  
Side Suction  
Single Stage  
Centrifugal

APCO Single Stage  
Turbine-Type

APCO Horiz. Condensation Return Unit

APCO TURBINE-  
TYPE PUMPS—the  
simplest of all pumps. Ideal for  
small capacity, high head duties.  
Silent, compact and lasting.

AURORA CENTRIFUGAL  
PUMPS for  
WATER SUPPLY • CIRCULATING • CHEMICAL HANDLING • TRANSFER • CONDENSATION • SEWAGE • CONSTRUCTION • MARINE • DEEP WELL • IRRIGATION • WASHING • COOLING • HOUSE and many other SERVICES IN INDUSTRY.  
A distinguished line embodying the latest hydraulic practices—a type and size for every need.

NSA Aurora  
Centrifugal  
Sump Pump

Write for  
CONDENSED  
CATALOG  
M

**AURORA**  
Always PUMPS  
**AURORA**  
PUMP COMPANY  
62 Loucks Street, AURORA, ILLINOIS

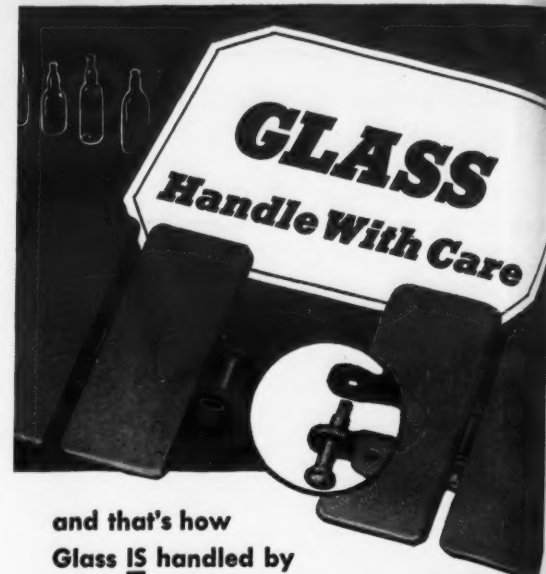
When inquiring specify CP8350 — see information request blank, pgs. 2-3

## ★ DIRECTORY ★ of products in this issue

You will find listed below the names of products and new literature items described in this issue, with page reference on each

Product	Page	Product	Page
<b>A</b>		Dust Collectors .....	33, 73, 79,
Abraser .....	20	Dust Removal from Gases .....	82, 84, 106
Abrasive Wheel, Diamond .....	53		71
Accident Data .....	34	<b>E</b>	
Acid-proof Equipment .....	25	Ejectors, Steam-jet .....	56
Adhesives .....	26, 28, 30, 88	Electronics & Radio .....	50
Agitators .....	30	Electroplating Kit .....	59
Air Cleaner, Electric .....	10	Engineering & Construction Service .....	97
Air Conditioning .....	101	Exchanger, Heat .....	34
Alloys .....	37	Extinguisher, Fire .....	50, 70, 98
Amplidyne .....	83		
Analizers, Electrolytic .....	23	<b>F</b>	
Autoclave .....	76	Fans, Exhaust Duct .....	39
		Fastenings .....	89
<b>B</b>		Feeders, Chemical .....	41
Bag Closers .....	87	Feeders, Vibratory .....	65
Bagging Unit, Portable .....	61	Filter, Horizontal Plate .....	86
Basin, Fat Recovery .....	94	Filter Aids .....	33
Blowers .....	47, 51, 56	Filter Plates .....	39
Bonding Process .....	94	Filter Press .....	102
Breast Protectors .....	90	Filter Press Closer .....	84
Bubbler, Sight Feed .....	17	Filters .....	8, 16, 31, 44, 52, 60,
Buckets, Elevator .....	34		66, 81, 94, 98
Buckets, Rehandling .....	52	Fires, Welding Prevention .....	44
		Fittings, Full-view .....	99
<b>C</b>		Fittings, Tube .....	70
Cabinets, Temperature & Humidity .....	43	Flaring Tool .....	72
Cans, Safety .....	38	Floor Patch .....	26, 28, 30, 106
Capacitors .....	50	Flooring, Steel .....	42, 77
Car Spotters .....	52	Furnace, Combustion .....	21
Carbon & Graphite Products .....	30	Furnaces, Laboratory .....	18, 103
Carboy Drainer .....	78	Fuse Puller .....	50
Cartons .....	44		
Centrifugals .....	54 & 55	<b>G</b>	
Chains, Conveyor .....	102	Gauge, Pipe .....	76
Chain Parts, Conveyor .....	57	Gauges .....	24, 46, 81
Chart, Plastic Instrument .....	46	Gear Reducers .....	36
Chemical Industries, 19th Exposition of .....	69	Generators, Steam .....	10
Chemical Steware .....	8	Gloves, Industrial .....	93
Chemicals, Basic .....	29	Gloves, Synthetic Rubber .....	65, 81
Chilling Units .....	48	Grating, Steel .....	42, 77
Classifiers .....	58		
Cleaner, Floor .....	28	<b>H</b>	
Cleaners, Air Line .....	98	Handling Equip. ....	4, 43, 62, 92
Cleaners, Automotive .....	51	Heat Units, High Frequency .....	101
Cleaners, Tube .....	53	Heater, Direct Fired .....	95
Cleaning Machine, Parts .....	49, 69	Heaters, Electronic .....	54
Cloth, Woven Wire .....	12	Heaters, Immersion .....	38
CO <sub>2</sub> Analyzer .....	20, 24	Heaters, Unit Grid .....	92
Coating, Plastic Cork .....	32	Hoists .....	34
Coatings, Protective .....	32	Hoists, Gear .....	63
Coatings, Wire .....	31	Hoods, Industrial .....	49
Compressors .....	56, 85	Humidification, Steam Type .....	80
Collector Loss Chart .....	41	Humidity Control .....	65
Condensate Return .....	70	Hydrocarbon Oil .....	27
Conduit System .....	96	Hydrofluoric Acid, Anhydrous .....	33
Control, Electronic Volume .....	9		
Control, Flame .....	23	<b>I</b>	
Controller .....	16	Impeller, Pump .....	56
Controls .....	19, 21	Indicator, Flow .....	47
Controls, Dehydration .....	18	Instruments .....	17, 20, 90
Controls, Draft .....	92	Insulation .....	12, 26
Controls, Level .....	13, 14, 17, 46, 48, 82	Interlocks, Safety .....	91
Controls, Temperature .....	17, 22, 48	<b>J</b>	
Conversion-to-Coal Service .....	51	Joints, Pressure .....	58, 88
Conveyors .....	8, 60, 70	Joints, Swing .....	60
	80, 92, 101, 104	<b>K</b>	
Coolers .....	47	Kettles .....	71, 74
Couplings .....	87		
Couplings & Fittings .....	40	<b>L</b>	
Couplings, Flexible .....	78	Laboratory Equipment .....	40, 92
Couplings, Roller Chain .....	37	Laboratory Furniture .....	17, 20, 37
Crane, Hand Power .....	96	Laboratory Glassware .....	20
Crane Drive Unit .....	11	Lamps, Infra-Red .....	43
Creams, Protective .....	28, 29, 86	Lathes .....	33, 55, 92
Cutter, Shape .....	47	Lighting Equipment .....	38, 47, 54,
Cutting Tool .....	98		68, 69, 78, 84
		Lining Maintenance .....	28
<b>D</b>		Lining, Synthetic .....	64
Drive, Adjustable Speed .....	38	Lining, Tank .....	9, 107
Dryers .....	47, 62, 71, 81, 90	Loader, Box Car .....	64
		Low-Temperature Units .....	57
		Lubricants .....	28
		Lubrication, Centralized .....	53, 80

(Continued on next page)



## and that's how Glass IS handled by WHITNEY Platform Conveyor CHAINS

With glass containers in greater use than ever, it takes greater care to keep breakage down and production up. And on conveying machinery, it takes the smooth-running, level-top operation of Whitney Platform Chains, moving at constant speeds that keep containers from piling into each other. So for greatest safety to your production... and for longest chain life... be sure to get Whitney Platform Chains on all bottling and handling machinery. The Whitney Chain & Manufacturing Company, Hartford, Connecticut

When inquiring specify CP8351 — see information request blank, pgs. 2-3

## 8 WAYS TO BETTER PROCESSING WITH SHRIVER FILTER PRESSES

The versatility and flexibility as to design, capacity and adaptability to your plant make these advantages of the Shriver Filter Press worthy of your consideration.

1. **FILTRATION** at any temperature or pressure to recover solids or liquids or both in any quantity at low labor and maintenance cost.
2. **CLARIFICATION** of liquids of any viscosity—using any filter media, filter aids, decolorizing or deodorizing agents.
3. **WASHING** filter cake thoroughly, entirely free of solubles.
4. **DRYING** filter cake partially or completely in the press by air or steam, saving on subsequent drying time and cost.
5. **THICKENING** slurries continuously, saving on decantation, extraction or washing time over settling methods.
6. **HEATING** filter cake in the press to distill, evaporate and recover all traces of solubles.
7. **REDISSOLVING** of filter cake in the press after filtering, to save on equipment and handling.
8. **BACKWASHING** to remove cake without opening filter press, saving on cleaning and preparation for the next batch.



The use of a Shriver Filter Press for any one or combination of these functions cuts down on equipment space, time and quantity of material in process.

All this and plenty more in the Shriver Filtration Book. Write for a copy.

**T. SHRIVER & CO., Inc.**

846 Hamilton St. HARTFORD, CT.

When inquiring specify CP8352 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



# ★ DIRECTORY ★ of products in this issue

(Continued from preceding page)

Product	Page	Product	Page
<b>M</b>			
Manometers .....	47	Saws, Masonry .....	61
Meter, Shunt Steam .....	46	Scales .....	8, 37, 100
Mill, Blast .....	87	Screens, Duplicating .....	73
Mill, Impact .....	62	Screens, Vibrating .....	51, 87, 94
Mills, Ball .....	68, 82	Sealer .....	45, 84
Mills, Colloid .....	4, 65	Sealing Materials .....	60
Mixers .....	15, 72, 85, 95, 96	Seals, Car .....	100
Mixers, Concrete .....	102	Separation Equipment .....	46
Mixers, Explosion-proof .....	70	Separator, Air .....	69
Mixers, Horizontal .....	89	Separators, Magnetic .....	72, 106
Mixing Equipment .....	5	Sewage Treatment .....	85
Moisture Indicator .....	44	Shield, Grinder .....	81
Motor, Fluid .....	75	Shield, Eye & Face .....	64
Motors .....	57, 71	Shovels, Powered .....	76
Motors, Explosion-proof .....	62	Sifters .....	82
<b>N</b>			
Nozzles, Spray .....	52, 91, 106	Slitter & Rewinder .....	88
<b>O</b>			
Oven, Annealing .....	97	Soap Dispenser .....	64
Ovens, Industrial .....	10	Solenoid Valves .....	22
Ovens, Laboratory .....	61	Sponge, Synthetic Rubber .....	80
<b>P</b>			
Packaging Equipment .....	68	Spray Drying Units .....	77
Packing List Protector .....	56	Spray Gun Chart .....	84
Packings .....	32, 63	Spray Painting Chart .....	51
Panelboard Conversion .....	22	Sprinklers .....	93
Paper, Wet Strength .....	27	Sprockets .....	39
pH Equipment .....	4, 22	Stampings, Metal .....	76
Photocopy Machine .....	34	Starters, Motor .....	22
Pipe, Plastic .....	32	Steel, Stainless .....	45
Pipe Fittings, Jacketed .....	80	Steel, Stainless-clad .....	66, 78
Pipe Joint Compound .....	30	Still, Solvent .....	66
Pipe Sections .....	58	Still, Water .....	24
Pipe Tools .....	40, 83, 89	Stitchers, Carton .....	72
Piping, Glass .....	95	Strainers, Pipe .....	58, 81
Piping, Underground .....	41	Strainers, Water .....	77
Porcelain, Chemical .....	60, 99	Strapping, Steel .....	87
Preservative .....	32	Switches .....	49, 52
Press, Dewatering .....	6	<b>T</b>	
Presses, Extrusion .....	86	Tacker, Hand .....	78
Printer & Marker .....	76	Tank Equipment .....	105
Process Plants & Equipment .....	62	Tanks, Wax Heating .....	74
Processing Equipment .....	3, 16, 43,	Temperature Indicator .....	49
49, 71, 78, 90, 4th Cover		Temperature-Test Units .....	46
Production Management .....	77	Test Bomb .....	18
Proportioning Units .....	2, 90	Tester, Boxboard .....	67
Pulverizers .....	74	Tester, Magnetic .....	19
Pulleys, Magnetic .....	46	Thermometers .....	42, 90
Pump, Diaphragm .....	73	Threading Machines .....	42
Pump, Electronic Control .....	58	Timers .....	24, 48
Pumpcups .....	73	Trailers .....	84
Pump Governor .....	53	Transmissions .....	79
Pumps .....	10, 12, 16, 42, 48, 50,	Transmitter, Flow & Level .....	50
56, 61, 72, 88, 92, 102, 104		Traps, Steam .....	12, 39, 41, 43, 89
Pumps, Hand .....	91	Truck, Barrel .....	66, 85
Pumps, Midget .....	48	Trucks, Industrial .....	40, 42, 53, 55, 98
Pumps, Proportioning .....	2, 90	Trucks, Lift .....	35, 52, 83
Pumps, Turbine .....	82	Trucks, Trailer .....	68
Pumps, Vacuum .....	44, 52, 86	Tube Cleaners .....	47
Pyrometer, Portable .....	49	Tubing, Heat Exchanger .....	7, 75
<b>R</b>			
Ramming Mixture .....	29	Tubing Identification .....	55
Recalibrator .....	14	Tubing, Insulation .....	86
Reducers, Speed .....	40, 60	Tumbling Machine, Drum .....	70
Refrigerators .....	32	<b>V</b>	
Refrigeration Units .....	97	Vacuum Cans .....	48
Regulator, Pressure .....	93	Valve, Gate .....	94
Relays, Time Delay .....	93	Valve, Pressure Reducing .....	45
Resiliency Tester .....	14	Valve, Repair Kits .....	51
Resins .....	26	Valve, Stop .....	79
Respirators .....	80	Valves .....	11, 24, 42, 66, 85, 94, 96
Rheostats .....	25, 48	Valves & Fittings .....	104
Roll Reconditioning .....	10	Valves, Butterfly .....	64
Rolls .....	77	Valves, Diaphragm .....	74
Roofing Material .....	51	Valves, Plug .....	12, 96
Rubber, Synthetic .....	26	Valves, Tank Vent .....	73
Rubber Sponge, Synthetic .....	85	Vapor Recovery System .....	105
<b>S</b>			
Safety Equipment .....	104	V-Belts .....	59, 67
Saw, Band .....	65	Vibration Meter .....	13
<b>X</b>			
X-Ray Apparatus .....	89	Viscometer .....	43



## NOW! PRECISION CONTROLLED HEAT IN YOUR LABORATORY

WITH THE INTRODUCTION of Lindberg Furnaces to the laboratory field, accurate regulation of temperatures is made available. You can now select the desired temperature required for carbon and sulphur determinations, special organic analyses, determination of the critical points of steel, fusions, ignitions, assaying, drying, and countless other laboratory operations where heat is employed.

### SMOOTH, "STEPLESS" POWER INPUT

The Lindberg Input Control, an adaptation of Lindberg's famous industrial furnace control, provides a manual adjustment to operate the furnace at any desired temperature. This heat regulation is smooth and "stepless" in principle because it can be made in

precisely any percentage of the total input of the furnace. Built-in transformers on the Combustion Tube, Crucible and Box type Furnaces, provide the reduced voltage for the heavy heating elements.

A high resistance, compensated pyrometer indicates the temperature at which the furnace is being controlled and a manually operated index pointer on the pyrometer can be set at the desired temperature, thereby making possible a visual check of the control setting as the furnace comes to heat.

### RUGGED CONSTRUCTION

Lindberg Laboratory Furnaces are sturdily built of heavy sheet steel, backed by courses of high temperature insulating slab and refractory brick. Heavy, low voltage, heating elements permit higher operating temperatures with longer life and fewer replacements as compared with light gauge elements. The clean streamlined shape of the Lindberg Laboratory Furnaces matches in appearance other modern laboratory equipment and contributes to the high standard of laboratory cleanliness.

Phone or write your dealer today. He will be glad to give you further information and prices.

Well-known Throughout the World as the Leaders in Developing and Manufacturing Industrial Heat Treating Equipment

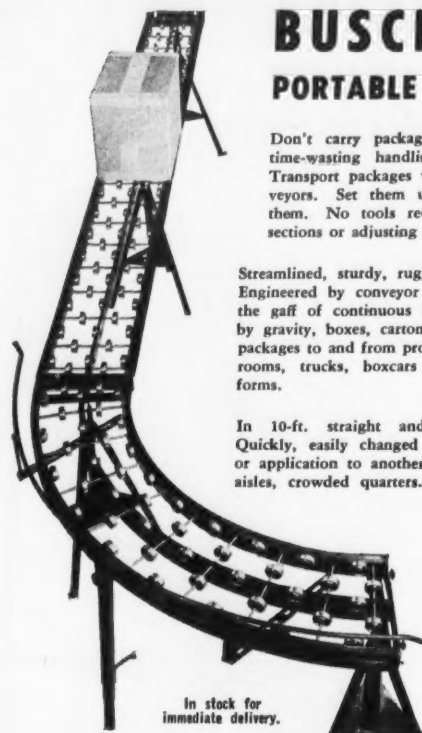


# LINDBERG

LINDBERG ENGINEERING COMPANY  
2450 WEST HUBBARD STREET, CHICAGO 12, ILLINOIS

SOLD EXCLUSIVELY THROUGH LABORATORY EQUIPMENT DEALERS

When inquiring specify CP8353 . . . see information request blank, pgs. 2-3



## BUSCHMAN PORTABLE CONVEYOR

Don't carry packages. Do away with time-wasting handling and rehandling. Transport packages with Buschman conveyors. Set them up where you need them. No tools required for coupling sections or adjusting height.

Streamlined, sturdy, rugged in construction. Engineered by conveyor specialists to stand the gaff of continuous service. Transports, by gravity, boxes, cartons, crates, and other packages to and from production lines, store-rooms, trucks, boxcars and loading platforms.

In 10-ft. straight and curved sections. Quickly, easily changed from one location or application to another. Ideal for narrow aisles, crowded quarters. Low in cost!

Write for  
Bulletin 8  
showing many  
applications.

In stock for  
immediate delivery.

The E. W. Buschman Co., Inc., 413 New St., Cincinnati 2, O.

When inquiring specify CP8354 — see information request blank, pgs. 2-3

## STAINLESS-STEEL VALVES AND FITTINGS



Write  
for  
**FREE  
CATALOG**

Catalog includes: illustrations... dimensions... list prices... of corrosion-resisting, stainless-steel gate, globe and angle valves. Also screwed and flanged pipe fittings. Cooper valves and fittings are finished by exclusive LUSTRACAST process which makes all surfaces, inside and out, bright and clean. Write today... we will be glad to give you this helpful fact-filled catalog.

**THE Cooper ALLOY FOUNDRY CO.**  
150 BLOY STREET • HILLSIDE, NEW JERSEY

When inquiring specify CP8355 — see information request blank, pgs. 2-3

Page 104

## ADVERTISERS in this issue

Advertiser	Agency	Page
Abbe Engineering Company	Spooner & Krieger	68
Acme Steel Company	Fulton, Horne, Morrissey Co.	72
Adams Company, R. P.	Melvin F. Hall Agency	8
Aeroquip Corp.	Guy C. Core Company	40
Airetool Mfg. Company	Harry M. Miller, Inc.	53
Ajax Flexible Coupling Co.	Horace Laney Advertising	60
Alberene Stone Corp.	Basford Co., G. M.	40
Allen Billmyre Corp.	Michel-Cather, Inc.	56
Allied Radio Corp.	Henry H. Teplitz Agency	50
Allis-Chalmers Mfg. Company	Compton Advertising, Inc.	10
Alloy Mfg. Company		58
Alloy Steel Products Company	Thoma & Gill	66
Alsop Engineering Corp.	Robt. L. Hirschfeld Advtg.	66
Alvey-Ferguson Company	Keeler & Stites	4
American Machine & Metals Co.	L. W. Ramsey Company	39
American Moonrail Company	Bayless-Kerr Company	62
American Photocopy Equip. Co.	Klau-Van Pietersom-Dunlap	34
American Tool & Machine Co.	James Thomas Chirurg Co.	54 & 55
Anderson Co., V. D.	Will, Inc.	12
Anetsberger Bros.	Kennedy & Company	43
Armstrong Machine Works	Russell T. Gray, Inc.	80
Aurora Pump Company	Fred A. Hinrichsen Agency	102
Automatic Switch Company	Alan B. Sanger Agency	22

Bacharach Industrial Instrument Co.	W. S. Hill Company	24
Baker-Raulang Company	Basford Co., G. M.	42
Baldwin-Duckworth		
(Div. Chain Belt)	Buchen Company	39
Barber-Colman Company	Cummings, Brand & McPherson	49
Barnstead Still & Sterilizer Co.	Sutherland-Abbott	24
Bartlett & Snow Co., C. O.	Henry T. Bourne & Assocs.	65
Beach-Russ Company	Spooner & Krieger	56
Beaver Pipe Tool Company		89
Bendix Aviation Corp.		
(Marine Div.)	Buchanan Company	91
Benjamin Electric Company	Van Auker-Ragland, Inc.	38
Blackmer Pump Company	Martin Associates	88
Blaw-Knox Company	Al Paul Lefton, Inc.	42, 62
Blickman, Inc., S.	Louis M. Cottin, Inc.	90
Bowen Research Corp.	George Homer Martin Advtg.	77
Bowser, Inc.	Industrial Advertisers	44
Brown Pintube Company	Henry T. Bourne & Assocs.	7
Brown Instrument Company	Addison Lewis & Associates	19
Brown-Provident	Hammond-Goff Company	46
Bump Pump Company	R. C. Breth, Inc.	104
Burgess, Inc.	Baker & Baker & Associates	78
Buschman Company, E. W.	Rudolph Krebs Advertising	104
B/W Controller Corp.	Hyatt Eby Advertising	46

Cambridge Instrument Company	E. M. Freystadt Associates	17
Cardox Corp.	Evans Associates	70
Cash Company, A. W.		45
Chain Belt Company	Buchen Company	92
Chicago Eye Shield Company	Kennedy & Company	64
Chiksan Tool Company	Dana Jones Company	60
Christie Company, L. R.	G. P. Blackiston	81
Clark Tractor Company	Wallace-Lindeman	52
Cleaver-Brooks	Klau-Van Pietersom-Dunlap	10
Cleveland Worm & Gear Co.	Paul Teas, Inc.	60
Clipper Mfg. Company	Potts-Turnbull Company	61
Cochrane Corp.	Willard G. Myers Agency	70
Coe Mfg. Company	T. H. Ball & Associates	43
Colonial Insulator Company	Brown Advertising Agency	60
Commercial Shearing & Stamping		76
Connelly Iron Sponge & Governor	A. B. Wilder, Inc.	47
Consolidated Pkg'g Mach. Co.	Everett L. Bowers, Inc.	61
Cooper Alloy Foundry Company	Michel-Cather, Inc.	104
Corning Glass Works		20
Corning Glass Works	Charles L. Rumrill & Co.	95
Crane Company	Buchen Company	42

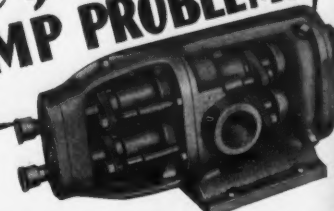
Darling Valve & Mfg. Co.	Griswold-Eshleman	73, 94
Davis Emergency Equipment Co.	Louis M. Cottin, Inc.	104
Davis Regulator Company	Russell T. Gray Inc.	24
Dayton-Dowd Company	L. W. Ramsey Company	82
Despatch Oven Company	Harold C. Walker Advertising	61
Diamond Chain & Mfg. Company	Kirkasser-Drew	37
Dietert Company, Harry W.		44
Dings Magnetic Mfg. Company	Russell T. Gray, Inc.	72
Dodge Mfg. Company	Klau-Van Pietersom-Dunlap	59
Dracco Corp.	Grover J. Johnson	73
Durametallic Corp.	Ogden Advertising	63
Dura-Tred Company	R. J. Skala Company	30
Duriron Company	Stewart Ankney Agency	96

Eagle-Picher Lead Company	Needham, Louis & Brorby	26
Eastern Engineering Company	Wilson & Haight	48, 96
Eclipse Air Brush Company	George Homer Martin Advtg.	84
Edge Moor Iron Works	Harris D. McKinney Company	85
Edward Valve & Mfg. Company	Commercial Advertising Agency	81
Electric Wheel Company	Ridgway Company	84
Elliott Company	Peterson & Kempner	51
Ertel Engineering Corp.		52
Exact Weight Scale Company	J. W. Sieverling	37

Fairbanks, Morse & Company	Henri, Hurst & McDonald	100
Federal Corp.	Paul Teas, Inc.	53
Felker Mfg. Company	Dozier-Graham-Eastman	53

(Continued on next page)

**HERE'S how to  
solve your wartime  
PUMP PROBLEMS**



SIZES FOR  
EVERY PLANT  
REQUIREMENT

Positive displacement type, Bump Pumps operate at slow speeds and are self-priming under high vacuums or against head pressures — delivering a constant volume per revolution that is not affected by speed or pressure.

As Bump Pumps have few parts, they are economical in cost and maintenance. Bump Pumps are easy to install and easy to maintain. In operation the liquid is drawn into the intake side of the pump by vacuum suction and expelled at the outlet side through piston action. Intake and Outlet ports are open at all times. Perfect seal between the two Rotors prevents liquid returning into the intake chamber.

Consult our engineers on your pumping problems — catalog upon request.

**TAKE CARE  
OF THE  
PUMPS  
YOU NOW  
HAVE...**

**The BUMP PUMP CO.**  
LA CROSSE ★ WISCONSIN

When inquiring specify CP8356 — see information request blank, pgs. 2-3

**Now! TOGETHER or  
SEPARATELY  
A Winning Combination**



**THE DAVIS  
HEDGARD**  
adjustable — fits  
any head — light-  
weight — shatter-  
proof — sanitary



**HUNTSMAN  
WELDING  
SHIELD**  
better vision —  
always in correct  
position



You can buy the shield or the hard hat (cap model) separately. But a simple clip attachment gives you a rigid combination of both safety devices for fullest protection. Immediate deliveries of both items. Send for further information.

address all inquiries to  
**DAVIS EMERGENCY EQUIPMENT CO.**  
56 Halleck Street, Newark 4, New Jersey

**DAVIS**  
DAVIS EMERGENCY EQUIPMENT CO. INC. • CHICAGO • NEWARK • BOSTON  
DAVIS EMERGENCY EQUIPMENT CO. LTD. • SAN FRANCISCO • LOS ANGELES

When inquiring specify CP8357 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



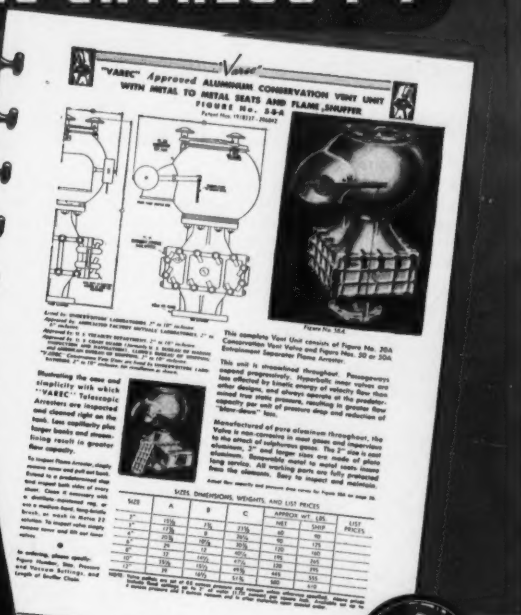
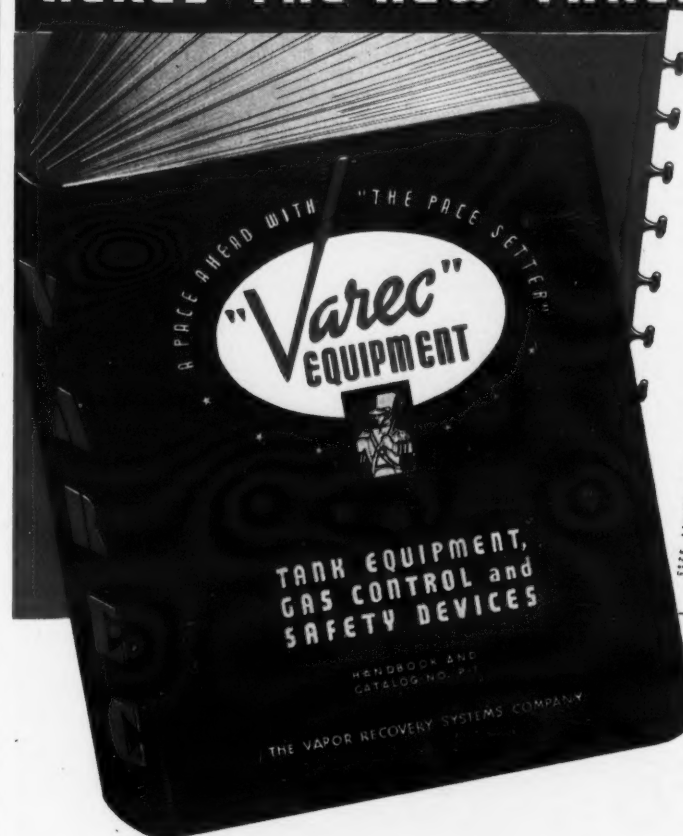
# ADVERTISERS in this issue

(Continued from preceding page)

Advertiser	Agency	Page
Felt Products Company	Van Auken-Ragland, Inc.	60
Filter Media Corp.	Alan B. Sanger Agency	39
Findley Co., F. G.	Paulson-Gerlach & Assocs.	88
Fine Machinery Corp.	David M. Gold	49
Fisher & Porter Corp.		47
Fluor Corp.	Harry P. Bridge Company	106
Forster Engineering Company	McCarty Company	97
Foxboro Company	Alan B. Sanger Agency	53
French & Hecht	Horton-Noyes Company	49
	Fred A. Hinrichsen Agency	98
Gast Mfg. Corp.	Van Auken-Ragland, Inc.	56
Gates Rubber Company	Cloyd F. Woolley, Inc.	67
General Electric Corp.	Holden, Stedman & Moore	50
General Electric (Apparatus Div.)	Basford Co., G. M.	43, 48, 50
General Electric (Lamp Div.)	Batten, Barton, Durstine & Osborn	75
General Electric (Motor Div.)	Basford Co., G. M.	62
Gifford-Wood Company	O. S. Tyson & Company	51
Globe Machine & Stamping Co.	H. D. Myers Agency	72
Goodall Rubber Company	Geo. C. Taylor Advtg.	64
Graver Tank & Mfg. Company	A. B. Wilder, Inc.	31
Greene, Tweed & Company	Michel-Cather, Inc.	32
Grimmell Company	Horton-Noyes Company	74
Green Mfg. Company	Moore & Associates	74
Hardinge Mfg. Company		58
Harper Company, H. M.	Commercial Advertising Agency	89
Haveg Corp.	Harry P. Bridge Company	30
Hayes Stellite Corp.		37
Hendrick Mfg. Company	Basford & Co., G. M.	77
Heberington & Berner	Caldwell-Baker Company	80
Hills-McCanna Company	R. J. Skala Company	90
Hough Company, Frank C.	Advertising Producers	76
Hunt Machine Company, Rodney	Channing L. Bete Company	77
Illinois Electric Porcelain Co.		11
Illinois Testing Laboratories		49
Illinois Water Treatment Co.	Howard H. Monk & Assocs.	44
Ingersoll-Rand Company		56
Ingersoll Steel & Disc	Rogers & Smith	78
International Engineering Co.	Parker Advertising Company	82
International Exposition Co.	O. S. Tyson & Company	69
Jackson & Church	Seemann & Peters	6, 76
James Company, D. O.	Paul C. Bowman	36
Jeffrey Manufacturing Company	Byer & Bowman	47
Jessop Steel Company	Sykes Advertising Agency	66
Johnson Corp.	Kreicker & Meloan	58, 88
Johnson & Jennings	Henry T. Bourne & Assocs.	73
Johnstone Engineering & Mach. Co.	Eugene A. Holland Advertising	88
Justrite Mfg. Company	A. B. Wilder, Inc.	38
Kemp Company, C. M.	Frank D. Webb Advertising	90
Kewanee Mfg. Company	Rogers & Smith	37
Kinney Engineers, S. P.	Walker & Downing	77
Kinney Mfg. Company	Hammond-Goff Company	52
Kirk & Blum Mfg. Company	S. C. Baer Company	10
Knight Company, Maurice A.	Brown Advertising Agency	25
Kold-Hold Mfg. Company	Jaqua Company	46
Laboratory Furniture Company	Metro Associated Services	20
Lammert & Mann Company		86
Lapp Insulator Company	Ed Wolff & Associates	99
Lee Metal Products Company	Walker & Downing	71
Leeds & Northrup Company		4
LeVal Filter Company	Fensholt Company	98
Lift Trucks, Inc.		35
Lincoln Engineering Company	Arthur R. Mogge, Inc.	80
Lindberg Engineering Company	M. Glen Miller Advertising	18, 103
Link-Belt Company	Behel & Waldie & Briggs	34, 57
Liquidometer Corp.	Lucerna Company	46
Logan Engineering Company	Advertising Producers	98
Lorejoy Flexible Coupling Co.	Merrill Symonds	78
Lumette Electric Company	Rogers, Gano & Bachrodt	14
Magnetrol, Inc.	Evans Associates	48
Marsh Corp., Jas. P.	Kreicker & Meloan	14
Mercer-Robinson Mfg. Company	Walter J. Gallagher	71, 78
Mercor-Nordstrom Valve Company	McCarty Company	85
Meriam Company	Bayless-Kerr Company	17
Milburn Company	W. B. Doner & Company	28
Milton Roy Pump Company	McLain Organization	9
Mine Safety Appliances Co.	Walker & Downing	86
Mixing Equipment Company	Charles L. Rumrill & Co.	15
Monsanto Chemical Company	Gardner Advertising	27
Mortell Company, J. W.	Weston-Barnett Company	32
Multiplex Concrete Machinery Co.		102
Murray Mfg. Company, D. J.	R. C. Breth, Inc.	92
National Carbon Company		30
National Drying Machinery Co.	Geo. C. Taylor Advertising	71
National Technical Laboratories	Dozier-Graham-Eastman	22
Neville Company	Wm. Cohen Agency	26, 32
Newark Wire Cloth Company	Alan B. Sanger Agency	12
Niagara Blower Company	Moss-Chase Company	34
Niagara Filters, Inc.		81
Nicholson & Company, W. H.	Lynn-Fieldhouse	39
Northern Blower Corp.	Carr Liggett Advtg.	33
Norton Engineering Works	Witte & Burden	96
Norton Company	John W. Odlin Company	32
Ohmite Mfg. Company	Henry H. Teplitz Agency	48

(Continued on next page)

## HERE'S THE NEW "VAREC" CATALOG P-7



THE PAGE SETTER  
SINCE 1928

# 224 Pages

OF FACT-PACKED DRAWINGS, FLOW-CHARTS, ILLUSTRATIONS & DATA COVERING:

- ✓ FLAME ARRESTERS
- ✓ PRESSURE RELIEF VALVES
- ✓ CONSERVATION VENT VALVES
- ✓ VAPOR RECOVERY SYSTEMS
- ✓ PRESSURE & VACUUM RELIEF VALVES
- ✓ EXPLOSION RELIEF VALVES
- ✓ PRESSURE REGULATORS
- ✓ AUTOMATIC TANK GAUGES
- ✓ SWING LINE EQUIPMENT
- ✓ TANK WINCHES & SHEAVES
- ✓ GAUGE & MANHOLE COVERS
- ✓ SEDIMENT & DRIP TRAPS
- ✓ MANOMETERS — DRAIN ELBOWS
- ✓ WASTE GAS BURNERS
- ✓ OTHER TANK APPURTENANCES

**"Varec"** THE VAPOR RECOVERY SYSTEMS COMPANY  
COMPTON - CALIFORNIA

Consultants, Designers, & Manufacturers of Gas Control & Tank Equipment

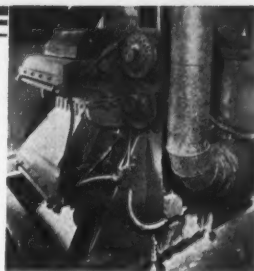
Branch Offices and Stocks Carried at:  
NEW YORK CITY • NEW ORLEANS, LA. • HOUSTON, TEX. • TULSA, OKLA.  
AGENCIES EVERYWHERE

"VAREC" • COMPTON, CALIFORNIA, DEPT. CP  
Kindly send "VAREC" Catalog P-7 to

NAME \_\_\_\_\_  
FIRM'S NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
STATE \_\_\_\_\_

When inquiring specify CP8358 . . . see information request blank, pgs. 2-3

## REJECTS PROBLEM solved with *Stearns* MAGNETIC SEPARATORS



"A very efficient and satisfactory unit," writes the owner of the Stearns Magnetic Type "KS" Twin Separator (above) used with dry grinding porcelain enamel where even the finest of magnetic particles are causes for rejects.

You may have a similar problem, similar material giving trouble. These Stearns "KS" Twin separators feature large capacities, low operating costs, minimum floor space, flexibly arranged for multiple magnetic zones to suit requirements.



Write for this  
new Bulletin 701

**Stearns Magnetic  
Mfg. Co.**

642 S. 28th St., Milwaukee, Wis.  
CLUTCHES — BRAKES — MAGNETS

When inquiring specify CP8359 — see information request blank, pgs. 2-3



## HOW TO PATCH FLOORS

... While Traffic Rolls

Here's a new, fast way to patch broken concrete without having to close off the area. Use durable INSTANT-USE... a tough, plastic material which you simply shovel into hole—tamp—and run traffic over immediately. NO WAITING. Bonds right to old concrete. Makes smooth, solid, heavy-duty patch. Withstands extreme loads. Keep a drum on hand for emergencies. Immediate shipment.

Request Descriptive Folder  
and Details of

**FREE TRIAL OFFER**

**FLEXROCK Company**

2311 Manning St., Phila. 3, Pa.

Please send me complete INSTANT-USE information... details of FREE TRIAL OFFER—no obligation.

Name .....

Company .....

Address .....

When inquiring specify CP8360 — see information request blank, pgs. 2-3

Page 106

## ADVERTISERS in this issue

(Continued from preceding page)

Advertiser	Agency	Page
Oliver United Filters Inc.	Alan B. Sanger Agency	16
Owen Bucket Company	T. H. Ball & Associates	52
Paisley Products Company	Moore & Associates	28
Palmer Company	Charles Schweim Company	42
Palmer-Shile Company	Charles Schweim Company	85
Pangborn Corp.	Commercial Advertising Agency	24
Paragon Electric Company	T. N. Thompson Agency	84
Parsons Engineering Corp.	Walker & Downing	4th Cover
Patterson Foundry & Machine Co.	McCarthy Company	92
Peerless Pump Company	Sykes Advertising Agency	46
Permochart Company	Charles L. Rumrill & Co.	3
Pfaunder Company	Bennett, Walther & Menadier	13
Photoswitch, Inc.	Carr Liggett Agency	81
Pioneer Rubber Company	A. P. Hill Company	5
Porter Company, H. K.	Earle Ludgin & Company	17
Powers Regulator Company	Louis M. Cottin, Inc.	4
Premier Mill Corp.	Hammond-Goff Company	2
Proportioners, Inc.	Thoma & Gill	80
Pulmosan Safety Equipment Co.	Louis M. Cottin, Inc.	74
Pulverizing Machinery Company	Louis M. Cottin, Inc.	74
Quincy Pump Company	A. P. Hill Company	10
Quincy Compressor Company	L. W. Ramsey Company	85
Reliance Electric Company	Meldrum & Fewsmith	38
Republic Flow Meters Co.	Evans Associates	50
Richmond Mfg. Company	Basford Co., G. M.	82
Ric-Wil Company	Carr Liggett Agency	96
Ridge Tool Company	Erwin, Wasey & Company	83
Robbins & Myers, Inc.	Dorenus & Company	61
Robins Conveyors, Inc.	Kennedy & Company	94
Rock-Tred Company	Spooner & Krieger	26
Rockwell Company, W. S.	James Thomas Chirurg Company	94
Rockwood Sprinkler Company	John H. Riordan Company	93
Rocky Mountain Steel Products Co.	Alexander Ross Agency	98
Ross Engineering Company, J. O.	McLain Organization	62
R-S Products Company	McLain Organization	64
Sabin Machine Company	MacMichael Advertising	66
St. Regis Paper Company	Basford Co., G. M.	68
Sargent Company, E. H.	Gere Burns Advertising	69
Save Electric Corp.	Advertising Producers	79
Schneble Company, Claude B.	Screen Equipment Company	51
Screen Equipment Company	R. J. Skala Company	70
Screw Conveyor Corp.	Spooner & Krieger	73, 102
Shriver & Company, T.	Evans Associates	87
Signode Steel Strapping Co.	Simplicity Engineering Company	87
Simplicity Engineering Company	Sly Mfg. Company, W. W.	87
Sly Mfg. Company, W. W.	South Bend Lathe Works	92
South Bend Lathe Works	Sparkler Mfg. Company	86
Sparkler Mfg. Company	H. A. Hooker Agency	84
Sperry Company, D. R.	A. B. Wilder Inc.	84
Spray Engineering Company	Larcom Randall Agency	52
Spraying Systems Company	Spencer W. Curtiss, Inc.	106
Sprout, Waldron & Company	Roland G. E. Ullman Org.	89
Square D Company	Reincke-Ellis-Younggreen & Finn	22
Stearns Magnetic Mfg. Company	Stebbins Engineering Company	106
Stebbins Engineering Company	Stephens-Adams Mfg. Company	28
Stephens-Adams Mfg. Company	Sterling, Inc.	64, 101
Sterling, Inc.	Stokes Machine Company, F. J.	44
Stokes Machine Company, F. J.	Surety Rubber Company	65
Surety Rubber Company	Surface Combustion Corp.	65
Surface Combustion Corp.	Swenson Evaporator Company	94
Swenson Evaporator Company	Synton Company	65
Synton Company	Taber Instrument Company	20
Taber Instrument Company	Taber Pump Company	12
Taber Pump Company	Taylor Instrument Companies	21
Taylor Instrument Companies	Toledo Scale Company	21
Toledo Scale Company	Towmotor Company	40
Towmotor Company	Triangle Package Machinery Co.	68
Triangle Package Machinery Co.	Trimount Instrument Company	17
Trimount Instrument Company	Turco Products Inc.	28
Turco Products Inc.	Union Carbide & Carbon Corp.	37
Union Carbide & Carbon Corp.	Union Special Machine Company	87
Union Special Machine Company	U. S. Stoneware Company	107
U. S. Stoneware Company	Universal Road Machinery Co.	69
Universal Road Machinery Co.	Vapor Recovery Systems Co.	105
Vapor Recovery Systems Co.	Vol-U-Meter Company	70
Vol-U-Meter Company	Wahlert Products Corp.	78
Wahlert Products Corp.	Weatherhead Brass Co., F. W.	69
Weatherhead Brass Co., F. W.	Weatherhead Company	70
Weatherhead Company	West Bend Equipment Company	68
West Bend Equipment Company	Western Felt Works	32
Western Felt Works	Western Precipitation Corp.	71
Western Precipitation Corp.	Weston Electrical Instrument Co.	20
Weston Electrical Instrument Co.	Wheelco Instruments Company	22
Wheelco Instruments Company	Whiting Corp.	106
Whiting Corp.	Whitney Chain & Mfg. Company	102
Whitney Chain & Mfg. Company	Wigand Company, Edw. L.	38
Wigand Company, Edw. L.	Wilson Chemical Feeders Co.	41
Wilson Chemical Feeders Co.	Wyandotte Chemicals Company	29
Wyandotte Chemicals Company	X-Pando Corp.	30
X-Pando Corp.	Yale & Towne Mfg. Company	34
Yale & Towne Mfg. Company	Yarnall-Waring Company	89



## Looking for BETTER SPRAY NOZZLES?

Try Spraying Systems nozzles. Every nozzle reflects our organization's thorough knowledge of spraying problems and ability to engineer the right answers into our product. Design features are carefully worked out for specific jobs, to do better, faster spraying. Write for your free copy of our new catalog today.

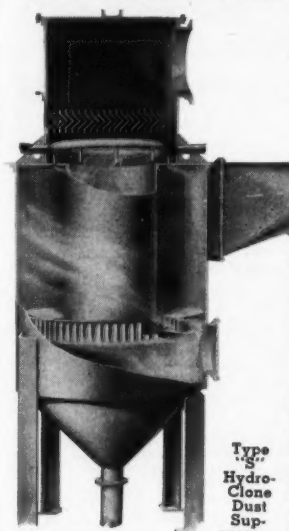
**SPRAYING SYSTEMS COMPANY**  
4037 W. Lake Street Chicago 24, Illinois



**SPECIALISTS IN THE DESIGN AND  
MANUFACTURE OF SPRAY NOZZLES**

When inquiring specify CP8361 — see information request blank, pgs. 2-3

## How to Suppress hazardous fumes and fine dust



A new Type "S" Whiting Hydro-Clone will suppress your hazardous industrial dust and fumes. Through the pre-cleaner and disintegrator sections the dust is completely knocked out of the air stream, the exhaust fan handling only clean air.

All the dust is reduced to sludge, which drains into a dewatering tank, and the water is recirculated through the Hydro-Clone which is completely self-cleaning.

The absence of moving parts, screens, cloth bags, and spray nozzles eliminates all maintenance. Air or gas at temperatures up to 1200° F. can be cleaned. Available in capacities from 2000 to 30,000 C.F.M. Write for Bulletin FY-110 and FY-114.

**WHITING  
CORPORATION**  
15667 Lathrop Ave.  
Harvey, Illinois

"Wetting is True  
Suppression"

When inquiring specify CP8362 — see information request blank, pgs. 2-3

CHEMICAL PREVIEW



## DO YOU HAVE A NEW SOLUTION?

Has a recent use of your equipment solved a difficult chemical process plant problem? The equipment may be new or from your standard line. For publication, data should state definitely (1) Nature of operation in question, i.e., cooking, cooling, mixing; (2) Difficulties involved such as control of temperature, product uniformity, lubrication or cleaning; (3) How was equipment used — in standard or modified form? (4) Results, facts on savings in time, labor, increased production or similar cost factors or extent of product improvement. Address the Editors.

### CHEMICAL PREVIEW

37 N. Michigan, Chicago 11, Ill.

(over)

## DO YOU HAVE A NEW PRODUCT?

improved product, either plant  
or laboratory equipment . . .  
or a new improved material  
. . . . of specific interest to the  
chemical process field? If you  
will submit detailed information  
including uses, specifications,  
performance, distinctive  
features, nature of accompanying  
photos, drawings or size of  
cut available, our Editors will  
consider it carefully for presentation  
to the 25,000 readers of this  
publication. There is no obligation.  
Write the Editors.

**CHEMICAL PREVIEW**  
737 N. Michigan, Chicago 11, Ill.



## That's Interesting

### Plastic Bullets

Plastic bullets shot in compressed air practice guns save many dollars in training machine gunners. The bullets cost under a cent each and can be used over again. The cost of operating a regular machine gun is some thirty times that of this new method.

### Replacing Steel Wool

Housewives who are missing the customary steel wool for cleaning aluminum and other type utensils are now offered a substitute said to be quite satisfactory. It is a special type of impregnated paper.

### Mobile Oil Reclaimers

Mobile oil reclaimers are now being made for military use. Mounted on a trailer, the equipment includes reclaimer, diesel electric generating set, tanks and water proof bins for refining earth and filter papers.

### Plastic Closures

Ceramic closures are now being made in twelve sizes, ranging from 10 mm to 89 mm. Chief use, to the extent of about one billion a year, is for cosmetic and various drug store merchandise. Threads are treated with a non-critical plastic solution to provide a smooth abrasive free contact with container.

### What Next?

A timed lawn sprinkler that automatically shuts off at a preset time, a venetian blind that raises and lowers in accordance with the degree of light and a tooth brush that sucks food particles from between the teeth are among some recent inventions just patented according to the "Agitator".

### Salvage

All kinds of items have been collected in various salvage drives. One of the more recent ones was for old stockings. The drive that ended in September resulted in the collection of 45,000,000 pairs.

### Give 'em the Axe

The Australians are the World's Champion choppers. It is a national sport and often attracts crowds of 50,000. The recent champion won by chopping through a standing eighteen inch log in the fast time of forty-six and two-fifths seconds.

### Movies Aid Research

Ultra high speed motion pictures are finding many applications in industrial research, such as study of contact between liquids and gases, causes of failures in packaging machinery and other equipment, in designing high speed mixtures and agitators. On the screen high speed motion is retarded 250 times slower than normal.

### Sea Going Cartons

A new packaging material so weatherproof that boxes made of it can be submerged twenty-four hours without falling apart. A new adhesive is an important factor in producing these boxes. They can be exposed to weather during shipment and in being unloaded from boats may be floated in with the tide.

For more information on product at right, specify CP 7928  
... see information request blank between pages 2-3.

FOR LONG, UNINTERRUPTED, TROUBLE-FREE SERVICE

# TYGON Lined TANKS



**YOU** don't have to "baby" a Tygon-lined tank! This sturdy, rubber-like plastic is not a molly-coddle. It's as tough as shoe leather, as durable as stoneware. Age will not affect it, nor will any of the present-day pickle or plating solutions attack it, not even the biting chromic acid solutions used in hard chromium plating.

Tygon tank linings are flexible. They adapt themselves easily to the contours of the vessel to be lined. U. S. Stoneware's exclusive bonding process develops an adhesion that makes the lining almost an integral unit with the shell, assuring a continuous one-piece lining, free from "pin holes" or thin spots.

Tygon linings may be applied to equipment of any size, any shape, either in our lining plants or in the field. Write today for new Bulletin.

## OTHER TYGON PRODUCTS FOR PLATERS

**Tygon Tempro-tec:** An easily applied liquid masking material for use in nickel or chromium plating, or for protection of parts between polishing room and plating bath. Dries to form a strong, durable film which strips readily free.

**Tygon Paint:** Lasting protection for equipment or structural steel exposed to corrosive fumes, condensates or occasional spillage. Applied with spray gun or brush.

**Tygon Tape:** A flexible tape for wrapping hooks and racks. Packed in convenient rolls, 3/4" wide. Available in two thicknesses — .012" or .008".

If you plan to attend the 19th Exposition of the Chemical Industries, Madison Square Garden, December 6-11, be sure to visit the Tygon exhibit in Booths 201-103.

**U. S. STONEWARE**

*Since 1865 • Akron, Ohio*

IN CANADA: CHAMBERLAIN ENGINEERING (CANADA) LTD., MONTREAL

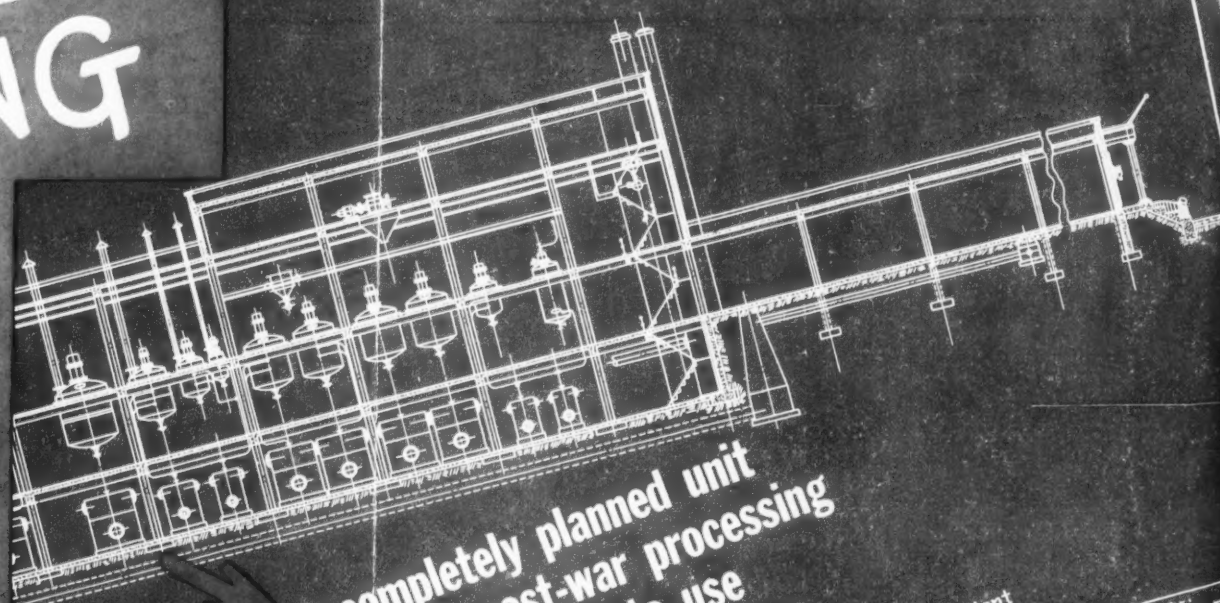
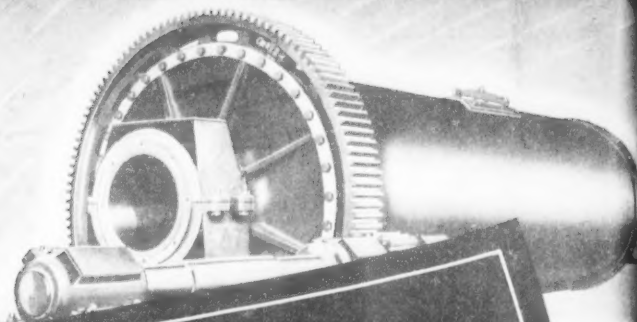
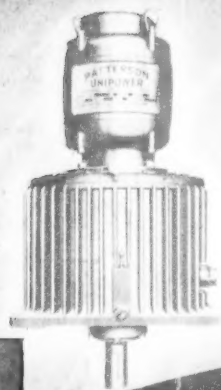


# Use PATTERSON PLANNING TODAY-

**PROFIT WITH  
PATTERSON  
EQUIPMENT  
TOMORROW**

THE PATTERSON FOUNDRY  
AND MACHINE COMPANY

LIVERPOOL, OHIO, U. S. A.



A completely planned unit  
for your post-war processing  
activity---ready to use  
whenever the time is ripe

*Richard L. Lewis*, President

THE PATTERSON FOUNDRY & MACHINE CO.

